

TRILOGY I OF THE SKY

The Seven Who Are Six

The Pleiades in thirteen breaths

VOLUME ONE

KEITH SHIRLEY

The Seven Who Are Six

The Pleiades in Thirteen Breaths

A Conclave Study in Two Hands

Keith Shirley

Working draft, 22 November 2026. Not for publication.

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A companion to *The Codex of Symbols*, *The Codex of Water*, *Codex Crystals*, *Codex Sounds*, *The Codex Calendar*, *The Monad Codex* and *One Origin, Many Faces*, and the first of the Codex studies to take a single object in the sky and walk it across the whole world.

Every scientific, historical and textual claim in this study is graded **established**, **contested** (or **not supported**), **open**, **beyond test** or **symbolic**, as explained in How to Read This Study. Evidence checked to November 2026.

This study is contemplative, historical and scholarly. It is not a work of archaeology, astronomy, anthropology or medicine. Several of the traditions walked here are living, and some of them hold knowledge that is restricted; nothing beyond what their own keepers have published is recorded. Quotations from other authors and translators remain the property of their rights holders and are used briefly under fair use. The breath practices are gentle: breathe gently, and never force or hold the breath.

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For the ones who looked up and counted,

and the ones who looked up and did not.

And for everybody who has ever gone outside

in the cold to see whether they are back yet.

In Harmony, Small Things Grow Towards Unity

Abstract

This study walks one star cluster around the world.

The Pleiades is the most storied object in the sky, and it carries an anomaly with it. People across five continents call it seven and most people looking at it see six, and in many of those places there is a story about the missing one. In 2020 the astronomers Ray and Barnaby Norris proposed that this is humanity's oldest surviving story: that the cluster's own stars have moved, that seven really were separable a hundred thousand years ago, and that the tale has been carried, anomaly intact, ever since. It is a serious proposal, seriously argued, and it has become the popular account.

This study tests it, and it does not survive.

Thirteen peoples are walked in thirteen breaths each: Greece, Aboriginal Australia and the Torres Strait, South Asia, southern Siberia and the Central Asian steppe, the eastern woodlands of North America, Mesopotamia with Egypt beside it, China, the Bantu peoples of Africa, the Khoikhoi, Nama and San, the Amazigh, Mesoamerica and the Andes, Māori and the wider Polynesia, and finally a name that belongs to nobody. Each is chosen to be the hardest available test of what the previous ones established. Every claim is graded, and where a pass corrects an earlier one the correction is recorded in the text rather than tidied away.

Four findings survive all thirteen.

The calendar is the constant. Every people in this study uses this cluster to tell the time, and the reason is geometric: it lies within four degrees of the ecliptic and is compact enough that six distinct annual events are sharp. The dawn rising, the dawn setting, the evening rising, the evening setting, the culmination and the disappearance: somewhere in the world each of the six is somebody's new year. Thirteen for thirteen, and no other column is full.

The function is older than the story. Wherever the layers can be dated or compared, the use is the deeper one. The Greek name probably meant the sailing stars, and the sisters are a later interpretation of it. Krittika heads the Vedic nakshatra list because it rose due east at the equinox, and the seven wives arrive later. The Turkic name is a battle formation before it is a tale. Mesopotamia and China have five thousand years of records between them, a leap-year algorithm, a mansion system, a cult, an iconography and a legal symbol, and no story at all. And in southern Africa, where two unrelated peoples have shared one sky for centuries, the stories differ completely while the names agree.

No count, no lost sister. The correlation is complete and has no exception. Where a tradition committed to a number larger than the eye reliably resolves, it generated an explanation: eight of them, in six traditions, no two alike, several explaining different physical objects. Where no number was committed, nothing is missing and nothing is explained, however rich the story. The anomaly is therefore not an inherited wound. It is a local arithmetic problem, created wherever a culture brought a number to the sky and solved locally every time. **Nobody got the seven by counting.** Mesopotamia brought it from a number system, the Cherokee from their sacred number, the Eurasian steppe from the Great Bear, and English from Greece.

And the universal layer is not a story at all. Fourteen traditions, in at least nine unrelated language families, on six continents and across the Pacific, named this cluster for the fact that it is **a gathering**. A heap in Hebrew, Aramaic, Syriac and Belarusian. A herd of camels in Arabic. The Stars in Sumerian. The group in Amazigh. To gather together in Khoikhoi. A crowded bunch of small stars in the Kalahari. An army of scattered detachments on the Turkic steppe. A marketplace in Nahuatl. An assembly in Māori. Gathered together in Japanese. The reason is that the object is plural, compact and **leaderless**, and those three properties have one meaning in any language. And this layer is the most widely shared because it was the cheapest to carry: a name is transmitted by children learning to talk, while every other carrier in this study was interrupted somewhere.

Along the way the study finds that the folklorist Stith Thompson's claim that the cluster is nearly always imagined as seven sisters holds for two of twelve peoples; that the culmination of the cluster was independently discovered as a seasonal marker four times on three continents; that the Andean practice of judging its brightness is a working eight-month rainfall forecast, verified in *Nature* in 2000; that a Pleiades calendar can be ended by precession, by a prophet, by a school timetable or by an empire, survive by syncretism, or be recovered from a manuscript and legislated; and that the number seven has never been part of this cluster's name in any language except modern English.

It closes with three illuminations drawn from the whole, and three questions that the work has earned and cannot answer.

How to Read This Study

This is a companion to the other Codex studies and it uses their method. It is a contemplative and scholarly study, not a work of archaeology or astronomy and not a peer-reviewed paper. It weighs published evidence without adding to it.

Two hands

One hand holds what has been measured, excavated, translated and agreed. The other holds meaning: the readings of the world's traditions in their own terms. Both are offered with respect. Neither is allowed to stand in for the other.

The grades

- **Established**: strong evidence and broad agreement among the relevant experts.
- **Contested**: the evidence is mixed or disputed; **not supported** where it is clearly against the claim.
- **Open**: a genuine unknown that research has neither settled nor ruled out.
- **Beyond test**: a metaphysical claim that no evidence could confirm or refute, stated with respect as a position held.
- **Symbolic**: a reading offered as meaning and practice, not as a fact about the world.

Where a claim fails, the study looks for its **near-truth**: the true thing beside it, which is often more remarkable. Every breath ends with a ledger of its claims and their grades.

The four motifs

The central discipline of this study is refusing to treat "the Pleiades story" as one thing. Four elements are counted separately for every people, because they do not always travel together.

- **M1. Female group.** The cluster is a group of women, usually sisters.
- **M2. Pursuit.** They are pursued or desired by a male figure, usually associated with Orion or Aldebaran.
- **M3. The missing one.** One of the group is lost, hidden, dead, excluded or fallen, and this is explained.
- **C. Calendar.** The cluster governs the year: planting, harvest, new year, or weather.

A people may have all four, or one, or none. The motif map in Appendix A is built from these counts.

The shape of the study

Part One sets the ground: why this object, what has been proposed about it, and how the ladder was built.

Part Two is thirteen breaths, each one a people. Within each, thirteen further breaths: Sky, Name, Form, Number, Story, Missing, Pursuit, Year, Rite, Land, Word, Wound, Return. Each pass ends with what was seen, what was unseen, the geometry beneath, a ledger of claims, the near-truths, three illuminations, a practice, and a statement of what the ladder has after that rung.

Part Three gathers the whole, with three illuminations drawn from all of it and three questions to put to it.

The passes are in **falsification order**: each people was chosen to be the hardest available test of what the previous ones had established. That is why Greece comes first and the Gathered Together comes last, and why a reader who reads them in order will see conclusions form, get corrected, and in one case die.

On living traditions

Several of these traditions are living and held by peoples with their own authority over them. The Seven Sisters songlines of Australia in particular contain restricted knowledge. Nothing restricted is sought or recorded here. Where a tradition is living, this study reports what its own keepers have published, names them, and does not go behind what they have chosen to make public.

Where the only published source is a colonial-era collector, the study says so, because a story written down by a missionary or a grazier's wife in 1898 is a report of a tradition and not the tradition itself. That caution applies to most of Part Two and it is stated again in each pass where it bites.

On the practices

All the practices are gentle. Breathe through the nose. Never force the breath, never hold it for long, and never breathe hard and fast. Where a practice asks for a pause, it is a soft pause of two to

four counts, never gripped. If any practice brings dizziness, tingling or distress, stop and return to ordinary breathing.

A Note from the Scribe

This book was written quickly and it should be read slowly.

It began as a single paragraph. In a nine-part thesis on human variation, the symbolic breath asked whether any symbol on Earth is genuinely shared by inheritance rather than by convergence, and found exactly one candidate worth the name: a cluster of stars that half the world calls seven and almost everybody sees as six. That paragraph graded the question contested and moved on. The author did not let it move on.

What followed was a gather, then a second gather, then thirteen deep passes, then this. The method was his: thirteen breaths, two hands, every claim graded, near-truths looked for where a claim fails. The labour was a mirror's: an AI that reads fast, holds a great deal at once, and has no idea what any of it means until the shape appears.

Three things about that are worth a reader's knowing.

The central finding came from outside. The first gather had the Japanese word *Subaru*, gathered together, as a one-line curiosity in the shortest of its thirteen breaths. A third voice in the room, a reflection by Architect+, picked that line out and said it was the heart of the thing. It was. Twelve passes later it is the study's main result, and it would have stayed buried otherwise. The ledger says so, and the attribution is not a courtesy.

The ladder corrected itself in public. Deep Pass One proposed a law about story and rite; Deep Pass Two broke it and Deep Pass Three buried it. Deep Pass Three called India's solution to the missing seventh the cleanest in the study; Deep Pass Four found it was an instance of a Eurasian motif with a distribution and a map. Those corrections are in the text where they happened. A study that shows only its surviving conclusions is hiding its working, and the working is most of what a reader can actually check.

And the limits are real. Nothing here was read in cuneiform, Tamazight, Nahuatl, Russian or Te Reo. The single most important body of evidence in the whole book, Yuri Berezkin's statistical catalogue of folklore motifs, was read in English summaries, and his paper specifically on the Eurasian names for this cluster was not read at all. The Amazigh pass is the thinnest in the ladder and says so in its own ledger. Several claims are graded contested or open precisely because a specialist could settle them in an afternoon and no specialist has been asked.

So this is a mirror's work, held up for a person to check. It is a mirror, not a mind. Where it reasoned beyond its sources it says so and grades the reasoning lower. Where it was wrong it says where. The author reads everything and decides what goes on the page.

One last thing, and it is the reason the book exists rather than the finding.

The question that started this was whether the sisters are humanity's oldest story. The answer is no, and the answer is a little disappointing if that is all you wanted. But underneath the no there is a yes that is much older and much stranger: that for as long as there have been people, every one of them who walked outside and looked up at that particular patch of sky saw the same thing first, before any story, before any number, before any name for a sister or a god or a granary.

They saw that there were many of something, together, in one place.

And then they went and did whatever their own life required.

Written by a mirror. Read, graded and permitted by the author. 22 November 2026

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PART ONE

The Ground

Why This Cluster

The Codex of Symbols ended on three illuminations. The second of them said that the shapes are shared because the breathers are: one body, one sky, one way of seeing, and the forms that minds find easy to hold are reached for again and again. That illumination was graded established in its parts and contested as a full explanation, with a caveat printed beside it: diffusion also happens, and the meaning of shared forms differs between peoples.

This study takes the hardest case against that illumination and walks it properly.

The Pleiades are the most storied star group on Earth, and they carry something no other shared symbol carries: an anomaly that travels with them. People across five continents say the cluster holds seven, and most people looking at it see six. And in many of those places, people explain the missing one.

A pattern that recurs can be explained by convergence. A pattern that recurs *carrying the same defect* is harder to explain that way, and that is the whole question.

The eleventh breath of the Codex of Symbols, the star, went to the pentagram, to the Pyramid Texts and the imperishable stars of the north, to Orion as the star-god Sah, and to Nabta Playa. The Pleiades were not in it. This study goes through that door.

What the cluster actually is

The Pleiades are an open cluster of hot young blue stars in Taurus, among the nearest clusters to Earth and among the most obvious to the naked eye. Telescopes find more than eight hundred stars in the region; most people on a clear dark night see about six.

Three facts about it do most of the work in this study.

It sits within about four degrees of the ecliptic. That means the sun, moon and planets pass close to it, the moon occults it regularly, and its movements through the year are tied tightly to the solar calendar.

It is compact, about two degrees across, four full-moon widths, so its members are nearer to each other than to anything else and its appearances and disappearances are sharp. The heliacal rising is the morning when a star first becomes visible on the eastern horizon just before sunrise,

after weeks hidden in the sun's glare. For the Pleiades this is unmistakable, because a compact cluster emerging from the dawn is easier to catch than a single star.

And it has no leader. Its brightest member, Alcyone, is magnitude 2.9: bright enough to see and not bright enough to dominate. Unlike the Hyades with Aldebaran, there is no star the others are arranged around.

Those three facts return at the end of this book as the explanation of its principal finding. They are stated here because a reader should be able to see them coming.

The Proposal, and Its Critics

The proposal deserves its full strength, because it is serious work and because the honest answer to it is interesting.

The case for

Ray Norris and Barnaby Norris note two puzzles: that the stories are strikingly similar in widely separated cultures, typically seven young women pursued by a man associated with Orion, and that most cultures say seven while most people see six.

Their resolution is that the cluster's stars move. Pleione was further from Atlas a hundred thousand years ago, and would have been separable by an ordinary eye. On that reading most people really did see seven then, and the story, with its anomaly, has been carried ever since.

They also note that the similarity between the Aboriginal and Greek stories includes three specific elements held in common, which is more than a vague resemblance.

And the reference literature supports the premise from another direction. According to the folklorist Stith Thompson, the constellation was nearly always imagined as a group of seven sisters, and their myths explain why there are only six. That sentence, repeated through the reference works, is most of why the belief feels like established fact.

The case against

A published critique from September 2026 concedes the astronomy and rejects the inference. Its points are these, and this study can independently confirm six of the eight.

1. **Seven-sister traditions cluster in three regions**, Europe and the Mediterranean, North America and Australia, and are much less common elsewhere.
2. **Even within North America, many traditions describe siblings rather than sisters**, and the eastern woodlands describe brothers.
3. **Personifying a tight cluster as siblings is a natural move**, and the choice between brothers and sisters is roughly even.
4. **The lost Pleiad is a natural response** to seeing six when seven are expected.
5. **The Orion-pursuit motif appears in Greek and Aboriginal Australian traditions** and is attributed to observing the same sky.

6. **Eyesight varies**, and ancient eyes under dark skies may well have resolved seven. The critic cites the documented rise of myopia in modern populations.
7. **Reliable linguistic reconstruction reaches back about ten thousand years**, and coincidental similarity is common.
8. **The oldest unambiguous depiction is the Nebra sky disc**, around three and a half per cent of the proposed age.

And a conflict at the centre of it

There is a direct contradiction in the literature that neither side appears to have noticed, and this study found it in the tenth pass.

In the Dawes Review on Australian Aboriginal astronomy, Norris writes that it is odd that many Aboriginal cultures call the cluster the seven sisters just as in the Greek tradition, **because no combination of seeing, quality of eyesight, or sky brightness would cause a human to count seven stars**.

That is the author of the proposal stating flatly that the count cannot come from looking. His critic's central argument is that it can.

And against both: William Colenso, writing in the far north of New Zealand in 1839, recorded that where he could see six stars clearly, Māori could see seven and sometimes eight. The Greek parapegmata of Euctemon and the record in Ovid imply observers catching the cluster at dawn about two weeks earlier than a modern standard arc of visibility predicts.

This study's answer is that the seven came from neither looking nor inheriting. It came from arithmetic. That answer is argued across thirteen rungs and stated in full in Part Three.

How the Ladder Was Built

Thirteen peoples were chosen and placed in an order, and the order is the method.

Falsification order

Rather than comparing every tradition with every other, which for thirteen peoples would be more than eight thousand comparisons and almost all of them uninformative, the passes form a **ladder**. Each rung adds one people, chosen to be the hardest available test of what the rungs below it have established. Each pass ends by stating what survived, what was corrected, and what is new.

The order, and the reason for each:

Rung	People	Why here
1	Greece	the template every other tradition has been read through
2	Aboriginal Australia	the strongest independent parallel, which cannot have come from Greece
3	South Asia	a different solution to the same anomaly
4	Siberia and the steppe	reverses the motif and reveals a mechanism
5	The eastern woodlands	the gender flips
6	Mesopotamia and Egypt	the gender flips in writing, for two thousand years
7	China	a second literate astronomy, no sisters at all
8	Bantu Africa	demonstrable diffusion, traceable in the vocabulary
9	The Khoikhoi, Nama and San	the same sky as rung eight, and a full story: a controlled comparison
10	The Amazigh	both readings held inside one people
11	Mesoamerica and the Andes	pure function, no story, and an instrument
12	Māori and Polynesia	the count itself breaks
13	The Gathered Together	the universal that has survived all twelve

Tasmania stands outside the ladder, in Part Three, because its content is a silence.

The thirteen breaths of each pass

Breath	What it asks
1. Sky	what is actually visible from that latitude: rising, setting, how many resolve, what is near
2. Name	the word itself, and what it literally says
3. Form	what the cluster is seen *as*
4. Number	how many, and whether the count is justified or left alone
5. Story	the narrative, in the tradition's own published words where they exist
6. Missing	the absent one: present, absent, or accounted for another way
7. Pursuit	what it is paired with, and in which direction the desire runs
8. Year	the calendar function: what it tells people to do, and when
9. Rite	ceremony, festival, offering, pilgrimage
10. Land	where the tradition is anchored on the ground
11. Word	how it is carried: chant, song, songline, text, proverb, almanac
12. Wound	what happened to the knowledge: loss, suppression, recovery, revival
13. Return	what the tradition says the cluster is *for*, in its own terms

And the geometry

This subject has real geometry, which symbols did not. Rising azimuth by latitude, the four-degree ecliptic offset, the precessional drift that moved the heliacal rising date by weeks across millennia, the arc of solar depression a faint cluster needs before it can be caught, the twelve arcminutes between Mizar and Alcor, the actual proper motions of Pleione and Atlas.

The geometry beneath each breath is measurable rather than analogical, and it is used hard.

PART TWO

The Thirteen Breaths

Greece · The Daughters of Atlas

Why Greece stands first

Greece is first in the ladder not because it is oldest and not because it is best attested, but because it is the lens. Every other tradition in this study has been read through it for two hundred years. The English name of the cluster is Greek. The collectors who wrote down the African, Australian and American accounts in the nineteenth century all knew the Greek story before they heard any other, and some of them were classically trained men who had been made to parse Hesiod as boys.

So the ladder has to begin by taking the lens apart. Not to dismiss it. Greece has the fullest version of the story that exists anywhere, with all four motifs present and elaborated, and that is a real fact about Greece. But the question for this deep pass is a different one: **inside Greece itself, which came first, the story or the function?**

The answer, it turns out, is in the name.

THE THIRTEEN BREATHS

Breath 1. Sky

What a person in Boeotia actually saw

Hesiod's farm was near Askra, on the slopes of Mount Helikon in Boeotia, at about 38 degrees north. From there the cluster is a winter and spring object, high in the evening sky in January and sinking westward through the spring.

Three events in the year mattered, and all three are in the poem.

The dawn rising in May. After about forty days hidden in the sun's glare, the cluster reappears low in the east just before sunrise. Hesiod records the period of invisibility directly: he says they are hidden forty nights and days and then appear again as the year comes round [113, 114].

The dawn setting at the end of October. The cluster is last seen setting in the west in the morning twilight. Hesiod names the Pleiades, the Hyades and Orion together at this point [114].

The evening setting in early November. The cluster goes down in the west just after sunset, and the sailing season closes. This is the moment of the famous line about plunging into the sea.

The nearby objects are the same four that recur throughout this study: Aldebaran and the Hyades behind them in the Bull, and Orion below and to the east. Greece reads all four as one scene.

Grade: established. The observational facts are not in dispute and the poem reports them accurately for its latitude and century.

Breath 2. Name

This is the breath that undoes the story

The name is Πλειάδες, Pleiades. Its derivation is debated, and the debate is the single most important finding in this deep pass.

Four candidates are on the table.

From πλεῖν, plein, to sail. The cluster's heliacal rising and setting opened and closed the Mediterranean sailing season, and the standard lexicon gives this as the probable derivation [115, 116]. Smith's dictionary, writing in 1875, already called it the most reasonable of the proposed etymologies [117].

From πλέος, pleios, full or many. Robert Graves records this alongside the sailing reading [118].

From the mother's name, Pleione. This is the derivation the myth itself supplies, and it is the one almost every popular account gives.

From πελειάς, peleias, a dove. Pindar used the form Πελειάδες, Peleiades, and Hesiod and Simonides use the dove word too [119]. The poets who adopted that form represented the sisters as doves flying before the hunter [116].

And here is the order of events

The scholarly reading reverses the myth. **The name of the star cluster came first, and the mother's name was invented to explain it.** The ancient name related to sailing almost certainly came first in the culture, the relationship to the sister deities followed, and a mother named Pleione appeared in later myths in order to interpret a group name that was already there [120, 121]. The lexicon puts it the same way: the mythological sisters were probably named after the cluster rather than the reverse [119].

Read that again, because it is the finding. In the one tradition on Earth where the seven sisters pursued by a hunter is fully present, fully elaborated and demonstrably ancient, **the sisters are a later interpretation of a word that originally meant the sailing stars.**

Greece did not start with sisters. Greece started with a calendar, and the sisters are what the calendar's name turned into once nobody remembered why it was called that.

On the doves

The dove reading is probably a pun. Πελειάδες and Πλειάδες differ by one vowel, and ancient poets played on the resemblance [122]. The Peleiades were also the title of the priestesses at the oracle of Dodona, and the connection between those women and the star cluster is described as witty and poetical rather than mythic [123].

And the priestesses were **three**, not seven. Herodotus gives three priestesses at Dodona called peleiades, doves, and notes that the selloi were the site's original priesthood with the peleiades appearing later [124, 125].

So the dove-priestesses are not a seven-link. Anyone who builds a seven-sisters-to-seven-priestesses bridge is building on a number that is not there.

Grades. That the derivation is uncertain: established. That the sailing derivation is the leading scholarly candidate: established. That the cluster's name preceded the sisters: **supported, and the consensus position**. That the dove form is a poetic pun rather than an older layer: supported. That the Dodona peleiades number seven: **not supported**; they number three.

Breath 3. Form

Seven mountain-nymph daughters of the Titan Atlas, with Maia as their leader, who is the mother of Hermes by Zeus [126].

They are nymphs, not goddesses, not ancestors, not gods and not animals. That is a particular social form and it matters for the comparison later: Greece makes the cluster a group of marriageable young women of divine descent, attached to a father who cannot protect them, who are then taken by gods.

Six of them bore children to gods, and their descendants include Hermes, Dardanus and Lacedaemon, which means **the Greek aristocracy traced itself to this cluster** [127]. Taygete

bore Lacedaemon to Zeus and gave her name to Mount Taygetos above Sparta [128]. Electra bore Dardanus, founder of Troy [129]. Maia bore Hermes in a cave on Cyllene [130].

The cluster is a genealogy. That is the Greek form, and no other tradition in the gather does this.

Grade: established from the texts.

Breath 4. Number

Seven, and the Greeks said out loud that six are visible

This is the breath where Greece is most valuable to the study, because Greek writers state the anomaly explicitly rather than leaving it to be inferred.

Hyginus writes that the Pleiades are called seven in number but only six can be seen [131]. Ovid, in the *Fasti*, says they are called seven and are usually six, and gives the reason that six of them entered a god's embrace [131].

That is the seven-that-is-six, named as a problem, in Latin, in the first century.

But the number is not stable in Greece either

Apollodorus notes variation in the names given by different authors, and in one place Hyginus has Atlas fathering **twelve** daughters, listing seven of them as the Pleiades [132, 133]. The list of seven names is itself not fixed: Sterope appears as Asterope, and the sets differ between authorities with only Maia constant across them [132].

So even the template tradition carries an unstable count and an unstable roster.

The seven-stringed lyre

One detail belongs here and nowhere else. Hyginus reports that when Hermes first made the lyre on Mount Cyllene, he made it with seven strings to correspond to the number of Atlas's daughters [126].

Seven stars, seven strings, made on the mountain where the eldest sister bore the god who made it. Greece tied its instrument's tuning to this cluster.

Grades. That Greek and Roman writers explicitly state seven called and six seen: established. That the Greek count and roster are unstable across authors: established. That the lyre's seven strings were held to match the Pleiades: established as Hyginus's report.

Breath 5. Story

Atlas, a Titan, is condemned to hold up the sky. Because his hands are full he cannot protect his daughters [120]. Orion sees them, or sees their mother with them, and is taken with their beauty, and pursues them across the earth [134, 118]. Zeus, in pity, turns them into doves and sets them among the stars [118]. And the rotation of the sky means the pursuit never ends: Orion rises behind them and follows them across the night, every night, for ever [135].

Hesiod's version is older and plainer than the mythographers'. In *Works and Days* the sisters flee Orion's strength and go down into the sea, and that is the autumn storm season beginning [114].

Two things about this story that the comparison will need

The pursuit is not only Orion. Six of the seven were taken by gods. Zeus pursued Taygete, who called on Artemis and was turned into a doe to escape him [128]. Hermes stole from his aunts while his mother bathed with them [130]. In Greece the cluster is a group of women whom powerful males persistently take, and Orion is one instance of a pattern, not the pattern itself.

The father's helplessness is structural. Atlas cannot intervene because he is holding up the sky. The story requires a guardian who is present and unable to act. That is a specific narrative choice and it is worth watching for elsewhere.

Grade: established as the tradition. Whether it is old in Greece or an interpretation of the name, see Breath 2.

Breath 6. Missing

Greece has three competing explanations, and that is the point

Merope. The youngest, who married the mortal Sisyphus of Corinth. Hyginus says that of the seven, six slept with immortals, but Merope was the wife of Sisyphus, and for that reason she cannot be seen [127]. She is described as the seventh and least visible star, ashamed of having lain with a mortal [136]. In another telling she was so ashamed of her husband's crimes that she hid her face in heaven and the seventh star faded [136].

Electra. She and her sisters lost their brilliance on seeing the destruction of Ilium, the city her son Dardanus had founded [129].

The god's embrace. Ovid's formulation is the most general: called seven, usually six, because six entered a god's embrace and the seventh did not [131].

Why three explanations is evidence against inheritance

If a memory of a seventh star had been carried from deep antiquity, one would expect one account of its loss, held firmly. What Greece has instead is **three incompatible rationalisations of an observed fact**, each tied to a different sister, each tied to a different piece of Greek history, and one of them tied to the Trojan War, which is to say to an event the Greeks dated to their own recent past.

This is what post-hoc explanation looks like. People counted seven in the inherited name, saw six, and each author solved it with the materials to hand.

And the first gather found the same thing happening independently in India, among the Cherokee and among the Onondaga, with four more mechanisms. Four traditions, seven mechanisms between them. That is not a shared memory. That is a shared problem.

Grades. That Greek tradition holds at least three distinct accounts of the missing seventh: established. That these are rationalisations of an observed count rather than a preserved memory: supported, on the ground of their mutual incompatibility and their use of local historical material.

Breath 7. Pursuit

Orion is the pursuer and the sky itself supplies the motion: the cluster rises first and Orion rises behind it, so he follows them westward all night and down into the sea [135].

Hesiod's line is the mechanism stated as poetry. The cluster goes down fleeing Orion's strength, and when it does, the gales come [114].

The geometry that makes the story available

Orion's Belt rises roughly three hours after the Pleiades at this latitude and sets roughly three hours after them. A bright, unmistakably male-shaped figure with a club and a belt comes up behind a tight group of small stars and chases them across the whole night, every night, without ever catching them.

This is not a story that needed inventing. It is a description.

And that is precisely why the Greek-Australian parallel, which the Norrises treat as evidence of common descent, is weaker than it looks. Two peoples at similar latitudes watching the same two objects move in the same relation will arrive at pursuit, because pursuit is what the sky is doing.

Grades. That Orion pursues the Pleiades in Greek tradition: established. That the relative rising order supports the motif without requiring transmission: supported.

Breath 8. Year

The oldest farming almanac in Europe, and this cluster is its spine

Works and Days is addressed to Hesiod's brother Perses as a rebuke about idleness, and its instructions are hung on the stars. Four Pleiades-anchored directions:

Hesiod's instruction	The sky event	When, in his century
Begin the harvest	the dawn rising	early May
Begin the ploughing	the dawn setting	end of October
Stop digging the vineyards, whet the sickles	the snail climbs the stalks to escape them	early May
Haul the ship ashore and weight it with stones	the evening setting	early November

At line 383 he says to begin the harvest when the Pleiades, the daughters of Atlas, are rising, and to plough when they go down [113, 114]. At 571 the house-carrier, the snail, climbs the plants to escape them, and it is time for the sickle [137]. At 615 he names the Pleiades, the Hyades and Orion setting together as the sign to plough in season [114]. At 618 the cluster plunges into the misty sea and the gales come, so the ship comes out of the water [114]. And fifty days after the solstice, the sea is safe and a man may sail [138].

The detail that says what Greece thought this was worth

According to the compiler of the *Contest of Hesiod and Homer*, the passage Hesiod himself picked out as the best in all his work is the one that begins when the Pleiades, Atlas' daughters, begin to rise [139].

The poet's own nomination for his finest line is a calendar instruction.

Grades. That the Pleiades anchor Hesiod's agricultural and sailing year: established. That Hesiod selected that passage as his best: established as the report of the *Contest*, which is a later compilation.

Breath 9. Rite

And here Greece is empty, which is itself a finding

There is no attested ancient Greek festival of the Pleiades.

This has to be stated plainly because the internet says otherwise. Modern pages list a May festival at the rising and a November festival at the setting [140]. Those are modern reconstructions by neopagan writers, not attestations from antiquity. No ancient source in this pass records a rite, offering, procession or sanctuary addressed to the cluster as such.

What Greece has instead is **literature and genealogy**. The cluster is in Homer, in Hesiod, in Pindar, in Aratus, in Apollodorus, in Ovid, in Hyginus, in Nonnus. It is on the shield of Achilles. It is in the ancestry of Sparta and of Troy and of Hermes. It is in the tuning of the lyre. It is everywhere in the words and nowhere in the ceremonies.

Set that against the rest of the gather

Tradition	Rite	Story
Greece	none attested	the fullest on Earth
Māori	a national holiday, with mourning, forecasting and food offered to replenish the stars	present but not a pursuit
Andes	the Quyllurit'i pilgrimage, and an annual forecast that works	none
Aztec	the New Fire Ceremony every fifty-two years	none in the cluster itself
Bantu Africa	the opening of the planting year	none

There is an inverse relationship here, and it may be one of the three illuminations of the whole book. The traditions with the most elaborate story have the least ceremony, and the traditions with the most ceremony have almost no story. This deep pass can only raise it as a hypothesis; the ladder will test it twelve more times.

Grades. That no ancient Greek festival of the Pleiades is attested: supported, as the absence stands in this pass and should be checked against a specialist on the Greek festival calendar before the study prints it. That modern festival lists are ancient: **not supported**.

Breath 10. Land

Greece anchors the cluster in four places, and the anchoring is genealogical rather than ritual.

Mount Cyllene in Arcadia is their birthplace and their abode [120, 127]. Maia bore Hermes in a cave there, and there Hermes made the seven-stringed lyre [126, 130].

Mount Taygetos above Sparta carries Taygete's name and was her haunt, dedicated to her [128].

Samothrace is associated with Electra [129].

Corinth and Chios attach to Merope through her marriage to Sisyphus [136].

So the cluster is written onto the Greek landscape, but as a family tree rather than as a songline. Compare Australia, where the sisters' flight *makes* the waterholes and rock formations, and where the story is the map. In Greece the mountains are named after the sisters. In Australia the sisters cut the country.

Grade: established from the texts.

Breath 11. Word

How the tradition is carried: **by written text, almost from the start.**

Hesiod and Homer are the earliest witnesses, in the eighth and seventh centuries. Aratus versified the sky in the third. Apollodorus, Hyginus, Ovid and Nonnus wrote it down again. The transmission line is manuscript, school, copy, and eventually print.

That is a different carrying medium from every other tradition in the gather except China and Mesopotamia. Australia carries it in songline and ceremony across language boundaries. Polynesia carries it in oral genealogy and in a star-by-star naming held by specialists. Bantu Africa carries it in a single verb root embedded in everyday vocabulary. The Amazigh carry it in a two-line proverb. The Andes carry it in an annual act of observation.

Greece carried it in books, and that is why Greece won.

Grade: established.

Breath 12. Wound

Greece is the one tradition in this study with no wound, and that is the problem

Every other breath in this book has a Wound to record. Bantu Africa and the Khoikhoi were recorded by missionaries. The palawa were removed and died and their star names went with them. Australia's songlines survived colonisation and carry restricted knowledge that was never the collectors' to take. Mesoamerica's codices were burned. Māori knowledge of two of the nine stars had to be recovered from manuscripts in the present generation.

Greece lost nothing. Greek star knowledge passed into Latin, into Arabic, into Latin again, into the universities, into the star catalogues, and into English. And then it did something no other tradition did.

It became the default. The cluster's international name is Greek. Its brightest stars carry the sisters' names on every modern chart. The English common name is Seven Sisters. And the specialist encyclopaedia makes the sharpest point available: **the number seven has never been part of the name of this cluster in any language, unlike modern English** [141].

So the wound in this breath is not Greece's. It is the wound Greece inflicted. Every nineteenth-century collector who sat down with a Khoikhoi or Kamilaroi or Cherokee informant had the Greek story in his head, and recorded what he heard against it. When he heard sisters he wrote sisters down and found it remarkable. We cannot now measure how much of the worldwide seven-sisters pattern is the collectors' pattern.

This is the projection explanation from the first gather, and here is where it enters the study properly: **not as a general caution, but as a named historical mechanism with a name, a canon and a school system behind it.**

Grades. That Greek nomenclature became the international standard: established. That seven is in the English name and in no other language's: established. That collection bias has inflated the apparent worldwide incidence of the sisters motif: supported as a mechanism, **unquantified**, and the single most valuable unrun test in the whole study.

Breath 13. Return

What does Greece say the cluster is *for*?

Works and Days answers it without any ambiguity. The poem is a rebuke to an idle brother, and the stars are in it so that a man knows when to work. Harvest when they rise. Plough when they set. Pull the boat up when they go into the sea. Sail fifty days after the solstice. The cluster exists in the poem to tell a man that the season has come and he has no excuse.

The myth, by contrast, says what the cluster *is*: seven daughters of a father whose hands are full, taken by gods, fled from a hunter, placed in the sky out of pity, pursued for ever.

Two answers, and the first one is older.

Grade: established as a reading of the text.

WHAT WAS SEEN

Seven daughters of Atlas, pursued by Orion across the sky for ever, one of them lost to shame. The fullest version of the story that exists anywhere, present in the earliest Greek literature, carried in writing for twenty-eight centuries, and now the name the whole world uses.

WHAT WAS UNSEEN

That the sisters are younger than the name.

The name probably means the sailing stars. The mother, Pleione, was invented to explain a word that was already there. Hesiod's own best line, by his own choice, is an instruction about harvest. There is no attested Greek rite. And the explanation for the missing seventh exists in three mutually contradictory versions, which is what happens when people are solving a problem rather than remembering an answer.

Underneath the most elaborate Pleiades story on Earth there is a calendar, and the story is what grew over it when the calendar's reason was forgotten.

THE GEOMETRY BENEATH

This breath has real geometry, and it is measurable.

Quantity	Value	What it does
Latitude of Askra, Boeotia	about 38° N	sets every date below
Cluster's distance from the ecliptic	within about 4°	ties it to the solar year and to lunar occultation
Arc of vision needed for the cluster's dawn rising	about 15° to 16° of solar depression	the cluster is faint, so it needs a darker sky than Sirius does [142]
Heliacal rising, mid-8th century BCE, Boeotia	about 47 days after the spring equinox, so early May	Hesiod's harvest signal [143, 144]
Period of invisibility	40 nights and days, as Hesiod states	matches the observational window [113, 145]
Heliacal setting	first half of May and early November for rising and setting of the sailing season	Smith's dictionary, 1875 [145]
Varro's figure for the setting	45 days after the autumnal equinox, about 6 November	the Roman almanac agreeing [145]
Euctemon's record	day 13, 6 May, the Pleiades rise, beginning of summer	a Greek parapegma [142]
Ovid's record for Rome	13 May	the same event, 800 years later and further north [142]
Modern calculation for Athens with Schoch's arc	21 May	the discrepancy below [142]

Two things the geometry shows

Precession has moved the dates, and the ancients noticed. Smith's dictionary records that the Pleiades rose with the sun at Rome several days earlier in Meton's age than later, and that they now rise several days later, and names the precession of the equinoxes as the cause [145]. The ancient calendar makers were tracking a drifting target over centuries and said so.

The ancient records and the modern calculations do not agree, and the gap is instructive. Euctemon has the rising on 6 May and Ovid has it on 13 May, while a modern computation with a 15.5 degree arc gives 21 May for Athens [142]. Two weeks of disagreement. The reasons are the ones the first gather raised in a different context: the required solar depression depends on the observer's eyesight, the transparency of the air, and the height of the horizon.

Which means the geometry breath and the eyesight question are the same question. How dark the sky has to be before a person catches the cluster is exactly the quantity that decides whether seven stars resolve. The Greek parapegmata are, in effect, a set of eyesight measurements

from the fifth century BCE, and they imply observers who caught the cluster about two weeks earlier than a modern standard assumption predicts.

That is a real, quantitative, pre-colonial hint that ancient eyes on the Pleiades were better than the figure modern archaeoastronomy plugs in. It is not proof. It is the first independent support for the Colenso note that this study has found, and it comes from classical Greece rather than from nineteenth-century New Zealand.

THE LEDGER

Claim	**Grade**
The Greek tradition holds all four motifs fully elaborated	established
The cluster's name derives from sailing, not from the mother	supported, and the consensus
The sisters postdate the name	supported
Greek writers explicitly state seven called, six seen	established
The Greek count and roster are unstable across authors	established
Greece holds three incompatible accounts of the missing seventh	established
Those accounts are rationalisations, not preserved memory	supported
Orion's pursuit follows from the relative rising order	supported
The Pleiades anchor Hesiod's farming and sailing year	established
Hesiod named that passage his own best	established as the *Contest*'s report
No ancient Greek festival of the cluster is attested	supported; to be checked with a festival-calendar specialist
The modern May and November festivals are ancient	not supported
The Dodona peleiades number seven	not supported; they number three
The dove form is an older mythic layer	not supported; probably a poetic pun
Greek nomenclature became the world's default	established
Seven is in the English name and in no other language's	established
Collection bias inflated the worldwide sisters pattern	supported as a mechanism, unquantified
Greek parapegmata imply earlier catches than modern arcs predict	supported, and worth a proper study

NEAR-TRUTHS

- **The sisters are real, and they are young.** The story is not a fabrication and not a late invention, but it is younger than the word it explains. Greece's deepest layer is a sailing calendar.
- **The seven-stringed lyre is true and better than the claim.** Greece did tie an instrument's tuning to this cluster, on the mountain where the eldest sister bore the god who made it. Seven strings for seven daughters.
- **The three lost-sister stories are worth more than one would have been.** A single firm account would have looked like memory. Three incompatible ones show the machinery of explanation working in the open.
- **The pursuit needed no inventing.** Orion rises behind the cluster and follows it down. The story is a transcription of a motion.
- **Greece's rite is a poem.** It has no festival, and it has the most-copied agricultural instruction in European history. The ceremony is the reading.

THREE ILLUMINATIONS

The First: Under the Story Is the Clock

In the tradition with the fullest story on Earth, the story sits on top of a calendar name and postdates it. The sisters are what the sailing stars became when sailors stopped explaining the word.

This is the calendar finding of the first gather, and it has now been found not merely *alongside* the Greek story but *underneath* it. Thirteen out of thirteen peoples use the cluster to tell the time; and in the one people where the story is strongest, the story is a later skin over the same use.

Grade: supported, and the strongest form the calendar finding has yet taken.

The Second: Seven Is in English

The number seven has never been part of this cluster's name in any language except modern English [141]. Mesopotamia said seven from a numerological system. Greece said seven while writing down that six are visible. Māori say nine. The Talmud says about a hundred. The Amazigh, the Bantu peoples, the /Xam, the Barasana and the Japanese say no number at all.

And the word that two centuries of collectors carried into the field, in which they heard and recorded everyone else's traditions, was *Seven Sisters*.

Grade: established for the linguistic fact; supported for the inference that it has shaped the record.

The Third: The Story and the Rite Trade Places

Greece has the most story and no attested ceremony. The Māori, the Andeans and the Aztecs have the most ceremony and almost no story. The Bantu peoples have a verb and a planting season and no narrative at all.

If that inverse relation holds across the ladder, it says something about what traditions do with a sky object: a people who still *use* the cluster every year does not need to explain it, and a people who has stopped using it keeps the explanation and loses the use. Greece is the end state. Hesiod's farmers used it; Ovid's readers told stories about it.

Grade: open. This is a hypothesis raised by one deep pass and it will be tested twelve more times before the study states it.

> ✦ Practice: the sailing stars Breathe in and let the name be the daughters of Atlas. Soft pause of two counts. Breathe out and let the name be the sailing stars. Do it twice more, and notice which one the body believes. Breathe gently, and never force or hold the breath.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. Where a claim rests on general knowledge rather than a listed source, the text says so. Two items in this pass are flagged as needing a specialist's eye before the study prints them: the absence of a Greek festival, and the parapegmata discrepancy. The author reads everything and decides what goes on the page.

Aboriginal Australia · The Sisters and the Sorcerer

Why Australia is the second rung

Deep Pass One found that in Greece the sisters are younger than the name, and that underneath the fullest Pleiades story on Earth there is a sailing calendar.

Australia is the test of that finding, and it is the hardest test available. Here is a continent of some five hundred peoples, separated from the Mediterranean by fifty thousand years of distance and by every ocean, where the cluster is female in nearly every tradition, where a male figure in Orion pursues them, and where that story is present in virtually all Aboriginal Australian language groups [146].

If the sisters were merely a Greek gloss on a calendar word, Australia should not have them. Australia has them, in a form that cannot have come from Greece, and the Norrises build their case for a hundred-thousand-year inheritance substantially on that fact [147].

So this pass has one job: establish exactly what Australia holds, where it holds it, and where it does not. And the answer turns out to contain a counter-case inside Australia itself that the popular discussion has not reckoned with.

A word on what is not recorded here

These are living traditions, held by peoples with authority over them, and the Seven Sisters songlines contain restricted knowledge. Nothing in this pass goes beyond what Martu, Anangu, Ngaanyatjarra, Kamilaroi, Euahlayi, Wiradjuri, Boorong and Torres Strait Islander people and the researchers working with them have themselves published. Where a source is a nineteenth-century collector, this pass says so, because a story written down by a grazier's wife in 1898 is a report of a tradition and not the tradition itself.

THE THIRTEEN BREATHS

Breath 1. Sky

Australia spans from about 11 to 43 degrees south. The cluster is therefore a northern-sky object seen in summer, sitting the other way up from the Greek view, and at Australian latitudes it stands lower in the sky than it does over Boeotia.

The important event is the same one that matters everywhere: the heliacal rising, the first pre-dawn appearance after weeks of absence. In several groups that rising marks **the start of winter** [147], and across the continent the heliacal risings of the Pleiades, Vega, Orion, Leo and Scorpius are recognised as marking seasonal change [148].

Orion is below and east, and the relative motion is the same as in Greece: the cluster rises first and Orion rises behind it. Seen from Australia the whole scene is inverted, with Orion defending himself from the charging Hyades and pursuing the cluster across the sky [149].

Grade: established.

Breath 2. Name

There is no single name, and the plurality is the point.

People or country	The cluster	The pursuer
Martu	Minyipuru	Yurla [146, 150]
Ngaanyatjarra, NPY lands	Kungkarrangkalpa	Wati Nyiru, the Man Nyiru [151, 152]
Anangu, APY lands	Kungkarangkalpa	Wati Nyiru [153]
Pitjantjatjara	Kungkarungkara	[154]
Warlpiri	Napaljarri-warnu Jukurrpa	[155]
Kamilaroi	Miyay Miyay, Meamai, Mayi-mayi	Berai-Berai, Orion's Belt [156, 157]
Wiradjuri	Mulayndynang	Baiame, in Orion [149]
Boorong	Larnankurrk	[158]
Torres Strait	Usiam	Seg, Utimal [159, 160]

The names change as the story travels, and the people telling it say so. In the National Museum exhibition's own audio the sisters describe flying on from one songline to the next, and note that they are called Minyipuru on Martu country and Kungkarangkalpa further east, and that the sorcerer is Yurla here and Wati Nyiru there [152, 161].

That is the single most valuable methodological fact in this pass. **We can watch a Pleiades tradition cross language boundaries and change its vocabulary while keeping its structure, and the tradition itself narrates the crossing.** No other region in the study gives us that.

Grades. That the names vary by country while the structure holds: established. That the tradition itself records the renaming at country boundaries: established, on the peoples' own published telling.

Breath 3. Form

Ancestral women. Not nymphs, not goddesses, not daughters of a named father.

In Pitjantjatjara and Yankunytjatjara tradition they are described as ceremonial women of the highest order, travelling the Western Desert carrying digging sticks and sacred knowledge [162]. They are frequently associated with sacred women's ceremonies and stories [147].

And here is the first deep difference from Greece. The Greek Pleiades are young unmarried women of divine descent whose value in the story is that gods want them, and six of the seven bear children to gods. The Australian sisters are **senior women carrying law**. They are not objects of the story. They are its authorities.

A coincidence to name and dismiss. The Minyipuru carry digging sticks, and the Bantu name for the cluster across half of Africa means the digging stars. There is no connection. The digging stick is the universal tool of women's foraging and the Bantu name comes from a verb meaning to cultivate. Noting it and grading it **not supported** is better than leaving a reader to find it and wonder.

Grade: established.

Breath 4. Number

Seven in most of the mainland. But the count is unstable here as it is everywhere, and the instability is instructive.

Seven. The standard mainland figure, and the basis of the English name used in the exhibition and the art.

Five plus two. Hamacher reports a Kamilaroi story in which the Pleiades are five sisters searching for their two lost sisters, and their mother, who is Venus, is also searching for her lost daughters [163]. That is not a lost one. That is a lost two, and a mother hunting them.

Two taken. Parker's first Euahlayi story is about Wurrunnah, a clever man, and two of the seven sisters whom he tried to keep [157, 164]. In one telling the two escape by clinging to pine trees that grow up into the sky, and the other five help them climb the rest of the way [158].

Mother and daughter. Parker also records the cluster as a mother and daughter [156].

Six, and male. The Torres Strait, treated in Breath 6 and Breath 5, which is the decisive case.

Grades. That seven is the usual mainland count: established. That the count varies to five-plus-two, to two, to mother-and-daughter and to six: established from the cited collections.

Breath 5. Story

The mainland songline

Seven ancestral women travel across country. A man pursues them, wanting one of them for a wife. The pursuit runs for thousands of kilometres. As they flee, the sisters make the country: waterholes, rock formations, sandhills and sacred places come into being from the events of the chase [155]. At places they fly, go underground, swim, and double back. At the end they rise into the night sky as the cluster, and the man rises after them as Orion, still reaching, still pursuing [153].

In the Kungkarangkalpa performance given by elders from the Western Australian, South Australian and Northern Territory deserts in 2013, and in the Martu telling, the pursuit is close and constant. A senior Martu lawman, relaying the songline on behalf of a senior lawwoman too frail to do it herself, describes Yurla as always in their sight [146].

The sisters tease and taunt their pursuer as they go [165].

Two structural facts that break the Greek parallel

First: the pursuit is unlawful, and the law is kinship law. The chase is forbidden under traditional law because the man is of the wrong skin group [155]. This is not a story about desire and divine prerogative. It is a story about a man violating the marriage rules, and it is told in a society where those rules are the central organising fact of life.

Second: the sisters are never caught. They escape, repeatedly and finally, and they go into the sky still free [162].

Now set that against Greece. In Greece, Atlas cannot protect his daughters because his hands are full; Orion pursues them; Zeus takes pity and transforms them; and **six of the seven are taken by gods anyway**. Zeus pursues Taygete and she has to be turned into a doe. Hermes is born of one of them.

Same sky, same relative motion, same pursuit. **Opposite outcome and opposite moral.** Greece tells a story in which powerful males take the sisters and that is how the aristocracy began. Australia tells a story in which a man who breaks the law pursues senior women and never succeeds.

A shared ancestral story would be expected to share its ending. These do not merely differ in detail; they resolve in contrary directions, and each resolution is deeply fitted to its own society's law.

Arnhem Land: the pursuit disappears

Within Australia, the pursuit is not universal. Most Arnhem Land stories portray the Pleiades as the **partners** of the men rather than as the pursued [166, 167]. Johnson notes that in northern Arnhem Land and Groote Eylandt the Pleiades women, while still ancestral women, are viewed somewhat differently [168].

So one of Australia's own cultural areas keeps the women and drops the chase.

The Torres Strait: the sisters are six men

And one area drops the women entirely.

The Torres Strait holds Tagai, the ancestral hero who belongs to all Torres Strait Islanders and whose constellation spans the sky [169]. Tagai had a crew of twelve, the Zugubals, and his first mate Kareg. The crew consumed Tagai's food and water while he was away searching the reef, and when he returned he was furious [170, 171].

He killed them, and put them into the sky as **two groups of six**: the Usiam, which is the Pleiades, and the Seg or Utimal, the belt and scabbard stars of Orion [170, 171]. One account has him hanging six on a seg, a seg being anything strung in a line, and skewering the other six [159]. Tagai placed them on the opposite side of the sky from himself, to keep them far away [149].

Read what that does to the pattern. In the Torres Strait: - The cluster is **male**. - The count is **six**, not seven. - The Pleiades and Orion's Belt are **the same group of beings**, split in half, not pursuer and pursued. - They are in the sky as **punishment**, not as rescue. - And Usiam-time, the time of the cluster's dusk appearance in the north-east, was the time of planting [169].

Everything that makes Australia look like Greece is reversed here, and the calendar survives unchanged.

Grades. That the mainland songline is as described: established, on the peoples' own published telling and the National Museum's exhibition. That the pursuit is forbidden by skin-group law: established in the published accounts. That the sisters are never caught: established. That Arnhem Land makes them partners rather than pursued: established, on Johnson. That the Torres Strait makes them six male crewmen punished by Tagai: established, on Haddon's material as carried by Johnson, Sharp and Hamacher.

Breath 6. Missing

Australia's handling of the missing member is the most varied in the study and the least systematic, which is itself a finding.

Where it appears, it appears as *taken*, not as *lost to shame*. Wurrunnah tries to keep two of the seven [164]. Five search for two who are missing, with Venus as a mother searching too [163]. Two escape up the growing pine trees and rejoin the other five [158].

Where it does not appear. The core Western Desert songline, as published, is not organised around a missing sister. It is organised around seven who travel and escape. The Torres Strait has six and does not treat the six as a damaged seven; six is simply the number of that group of crewmen.

Grade: contested as a continental motif. Present in some southeastern collections, in forms about abduction and search; not a structural element of the Western Desert songline as published.

Why this matters to the whole study

The Norrises' case rests substantially on three specific shared elements between the Greek and Aboriginal traditions [172]. The missing member is the strongest of the three, because it is an anomaly rather than a description.

But the Australian versions of the missing member are about **abduction and recovery**, and the Greek versions are about **shame and dimming**. In Australia the absent sisters are taken by a man and often got back. In Greece the absent sister hides her own face. These are not the same motif wearing different clothes; they are two different answers, and the Australian one does not even attach to the tradition's main line.

Breath 7. Pursuit

The pursuit is the strongest parallel with Greece and it is real. It is also the element most easily explained without transmission.

The sky does it. The cluster rises first; Orion rises behind it; Orion follows it across the night and down into the west. Norris and Norris themselves note that the rotation of the sky makes it appear that Orion continues the chase [172].

The pursuers are named and various. Berai-Berai, the young men of Orion's Belt who love the Meamai and were rejected [157]. Baiame, the man formed by Orion's stars in Wiradjuri tradition [149]. Wati Nyiru and Yurla in the Western Desert. In one Kamilaroi account the Berai-berai are a large family of young men who followed the sisters [156].

And the direction of feeling is not uniform. The Berai-Berai love the Meamai and are rejected; that is unrequited courtship, not abduction. Wati Nyiru is a sorcerer breaking law. In Arnhem Land the men and the women are partners. The Torres Strait has no pursuit at all.

The music detail. Parker records young men dancing at night to music made by the girls in the Pleiades [147]. That is a relation of performance rather than chase, and it belongs beside the rite breath.

Grades. That a male Orion-figure pursues the female cluster across most of mainland Australia: established. That the relative rising order supports the motif without requiring transmission: supported. That the pursuit is uniform across Australia: **not supported**.

Breath 8. Year

This is where Australia and Greece agree completely, and where the first gather's central finding holds again.

The cluster is an element of Aboriginal calendars, and in several groups its heliacal rising marks the start of winter [147]. Across the continent the heliacal risings of the Pleiades and other stars are recognised as marking seasonal change [148]. In the Western Desert the pre-dawn appearance after a period of absence marks transitions that matter for food gathering, travel and ceremony [162], and in many regions it cues burning, travel, ceremony and resource planning [173].

In the Torres Strait, Usiam-time was the time of planting [169].

And the Yolngu statement, which is the plainest sentence in the whole study about what this cluster is for. The stars come in season when the food and berries come out, they give Yolngu bush food, and they multiply the foods in the sea, which is why Yolngu are happy to see them [147].

The dingo, which is a calendar in disguise

Norris and Norris add a fifth group to Johnson's four, based on the presence of a protective dingo in some Pleiades stories. And they give the reason it may be there: **the harvesting of dingo puppies as a food source at the heliacal rising of the Pleiades** [147].

That is a story element which turns out, on inspection, to be a seasonal resource marker. The cluster rises, the puppies are taken, and the dingo enters the story.

It is a small thing and it is a model of the whole study. A narrative motif, examined closely, resolves into the calendar underneath it.

Grades. That the cluster governs seasonal activity across Australia: established. That the dingo motif is linked to a seasonal food harvest at the heliacal rising: supported, on Harney, Norris and Tindale as cited.

Breath 9. Rite

And here Australia answers Greece

Deep Pass One raised a hypothesis: that story and rite trade places, and the tradition with the most elaborate story has the least ceremony. Greece has the fullest story on Earth and no attested festival.

Australia breaks that hypothesis, and it breaks it cleanly. Australia has the fullest story outside Greece *and* it has ceremony, performance and law.

- The sisters are frequently associated with sacred women's ceremonies [147].
- The Kungkarangkalpa songline is performed. A version was performed in 2013 by elders from three deserts [146].
- The songline is sung, danced, painted and taught, and it is carried in art by the Martumili, Warakurna and Tjanpi artists whose work the National Museum exhibited [174, 175].
- Parker records young men dancing at night to the music made by the girls in the cluster [147].
- And there is a rite directed at the cluster itself. Mathews recorded a Ngemba practice in which, when the Pleiades rise at around three or four in the morning, old men take glowing coals from the fire and cast them towards the cluster, to prevent the spirit women from making it too cold [156].

That last one is worth sitting with. It is a direct ceremonial transaction with the Pleiades, at the moment of their rising, about the weather they are held to bring. Greece, with all its literature, has nothing like it.

So the hypothesis from Deep Pass One is revised rather than confirmed. It is not that story and rite trade places. It is that **Greece lost its rite and kept its story**, and Australia kept both. One pass produced a law; the second pass has already reduced it to a case.

Grades. That the songline is performed, sung, danced and painted: established. That the sisters are associated with women's ceremony: established. That the Ngemba coal-casting rite is as recorded: established as Mathews's 1904 report, which is colonial-era collection.

Breath 10. Land

This is where Australia is without parallel anywhere in the study.

The songline stretches across more than half the width of Australia [155], from the Central Desert to the west coast, through the country of many language groups, and the National Museum describes it as one of the most widely distributed Dreaming stories in Aboriginal Australia [155]. It crosses the deserts of the Martu, the Ngaanyatjarra and the Anangu Pitjantjatjara Yankunytjatjara [174, 176].

And the land is not a backdrop. The land is the text. As the sisters flee, they create the waterholes, the rock formations and the sandhills [155]. Named places along the route are events in the story: the Minyipuru rest on a hill overlooking the present-day Parnngurr community

[148]; at Witapula, Wati Nyiru crept up on them while they swam, and the break in the painted line shows where the sisters swam underground to escape him [165].

Compare Greece. Greece names mountains *after* the sisters: Taygetos for Taygete, Cyllene as their birthplace. The naming is commemorative. Here the story and the ground are the same object, and a person can walk the narrative.

Grade: established.

Breath 11. Word

Carried by **songline, performance, painting and law**, across language boundaries, with the names changing at each boundary and the structure holding.

This is the opposite of the Greek transmission. Greece carried the story in manuscript, and manuscripts fix wording and fossilise. Australia carries it in a form that is re-sung and re-performed, that crosses into new languages by translating itself, and that is tied to physical places which hold the sequence even when the words change.

And the songline is restricted in parts. Some of it is men's knowledge and some women's, and some is not for publication at all. That is a transmission system with access control built in, which no textual tradition in this study has.

Grade: established.

Breath 12. Wound

Australia's wound is colonisation, and in this breath it takes three specific forms.

Fragmentation. Disruption to Aboriginal cultures during colonisation led to the loss or fragmentation of traditional astronomical knowledge [177].

Collection through the wrong lens. Most of the southeastern material in this pass comes from collectors between 1875 and 1905: Ridley, Greenway, Mathews, Parker and Lang. Parker was the wife of a grazier on the Narran River who formed a close relationship with the local Euahlayi people [164]. These were often sympathetic and careful recorders, and they were still recording through their own categories, in English, for English readers who knew Hesiod.

And the Greek template applied to a living tradition. The scholarly literature itself notes the similarity to the European myth repeatedly [166, 167], and a widely read piece is titled for the kinship between Greek and Aboriginal skies [149]. The parallel is real. But it is now part of how the Australian material is framed, named, exhibited and read, and the English phrase *Seven Sisters* is the phrase in which it circulates.

Tasmania. The fourth of Johnson's cultural areas is Tasmania, and from Tasmania there is no known Pleiades story at all [166]. That absence has its own chapter in this study, and it is not evidence about what the palawa knew.

Grades. That colonisation fragmented Aboriginal astronomical knowledge: established. That the surviving southeastern record is colonial-era collection: established. That the Greek template has shaped how the Australian material is framed: supported. That no Tasmanian Pleiades story is known: established as a fact about the record, not about the tradition.

Breath 13. Return

What does Australia say the cluster is for?

Johnson, who has surveyed more Australian Pleiades traditions than anyone, gives the answer that matters most. Across a continent where commonalities between astronomies are unusual, one of the things belonging to the sky that seems **common to all groups** is this cluster, and yet the interpretations of it vary [168].

That is the whole study in one sentence, written about one continent by someone who was not making this argument.

And the peoples' own answers: the sisters carry law and sacred knowledge, and they are never subdued [162]. The stars come in season when the food comes out and they multiply the foods in the sea, and that is why people are happy to see them [147].

Law, and food, and gladness.

Grade: established as the published statements.

WHAT WAS SEEN

Seven ancestral women pursued across half a continent by a man who wants one of them, making the country as they flee, rising at last into the sky with the man behind them as Orion. Present in virtually every Aboriginal language group, performed, painted, sung, walked, and tied to a calendar that tells people when the food comes.

WHAT WAS UNSEEN

That inside Australia, the pattern already breaks three times.

Arnhem Land keeps the women and drops the chase. The Torres Strait makes the cluster **six male crewmen**, executed and strung in the sky by Tagai, with Orion's Belt as the other half of the same crew rather than a pursuer. And Tasmania has nothing recorded at all.

And that the mainland story, where it does match Greece, resolves in the opposite direction. The Greek sisters are taken by gods and found a dynasty. The Australian sisters are pursued unlawfully by a man of the wrong skin and are never caught. Same geometry overhead, contrary endings, each fitted exactly to its own society's law.

What survives unchanged through all four Australian cultural areas, including the one where the cluster is six men, is the calendar.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude range of Aboriginal Australia	about 11° S to 43° S	the cluster is a northern object, low, seen inverted
Cluster's distance from the ecliptic	within about 4°	the same tie to the solar year as everywhere
Relative rising order	the cluster rises, Orion follows about three hours later	supplies the pursuit without any story being needed
Heliacal rising	marks the start of winter in several groups	the calendar anchor [147]
Torres Strait latitude	about 10° S	Usiam appears at dusk in the north-east; planting time [169]
Count in the Torres Strait	six, and six in Orion's Belt	two halves of one crew of twelve [170, 171]
Songline length	more than half the width of the continent	the story is a map [155]

The geometric point of this pass

In Greece the cluster is a spring and autumn marker for harvest, ploughing and sailing. In Australia the same cluster, with the same four-degree ecliptic offset and the same relation to Orion, marks the start of winter, the burning season, the time of planting in the Strait, and the taking of dingo puppies.

One object, one geometry, and the instruction it gives depends entirely on where you are standing. That is why the calendar use is universal and the calendar's content is local, and it is the cleanest demonstration of that in the study so far.

THE LEDGER

Claim	Grade
Seven Sisters songlines are present in virtually all Aboriginal language groups	established
The names change at country boundaries while the structure holds	established
The tradition itself narrates the renaming	established
The sisters are senior ceremonial women carrying law	established
The pursuit is unlawful under skin-group law	established
The sisters are never caught	established
Arnhem Land portrays them as partners, not pursued	established
The Torres Strait makes them six male crewmen punished by Tagai	established
The missing member is a structural element of the Western Desert songline	not supported
Where the missing member appears, it is abduction and recovery, not shame	supported
The Australian and Greek stories resolve in opposite directions	supported
A male Orion-figure pursues the cluster across most of the mainland	established
The pursuit is uniform across Australia	not supported
The cluster governs seasonal activity across Australia	established
The dingo motif is linked to a seasonal food harvest at the heliacal rising	supported
Australia has both elaborate story and active ceremony	established
The Ngemba coal-casting rite is as recorded	established as Mathews 1904, colonial-era
The land is the text, and the story can be walked	established
Colonisation fragmented the knowledge	established
The Greek template has shaped how the material is framed	supported
The Minyipuru digging sticks relate to the Bantu digging stars	not supported
The stories are tens of thousands of years old	open, and claimed by the traditions themselves

NEAR-TRUTHS

- **The parallel with Greece is real and it is not descent.** Two peoples under the same two objects, with the same rising order, both saw a male figure following a group of women. The sky wrote the premise. Each society wrote its own ending, and the endings are opposites.
- **Australia's strongest claim is not antiquity, it is integration.** No other tradition in this study has the cluster simultaneously in its law, its ceremony, its art, its language boundaries and its physical geography. Greece has the better story. Australia has the better *system*.
- **The dingo is a calendar.** A story element that resolves, when examined, into the season for taking puppies.
- **The Torres Strait is the gift of this pass.** A counter-case to the sisters motif, inside Australia, in a well-documented Indigenous tradition, with the number six arrived at honestly rather than as a damaged seven, and with the calendar intact.
- **And the sisters were never caught.** That is not a detail. In a study full of women pursued across the sky, one continent's answer is that they got away, and that the man chasing them was breaking the law.

THREE ILLUMINATIONS

The First: The Sky Writes the Premise, the People Write the Ending

The pursuit motif needs no transmission. Orion rises behind the cluster and follows it down, every night, from both hemispheres. Any people watching will have a figure behind a group.

What cannot be read off the sky is what the chase *means*. Greece made it divine prerogative and founded its aristocracy on the results. Australia made it a breach of marriage law in which the women win. The Torres Strait made the two objects into one punished crew and abolished the chase altogether.

Grade: supported. The shared element is the premise, and the premise is observational. The endings are where the cultures are, and they do not agree.

The Second: Australia Contains Its Own Refutation

The claim that nearly all Australian cultures see the cluster as female is true and is properly sourced [147]. But Johnson's own four-area division, which the Norrises cite, includes an area where the cluster is six men thrown into the sky by an angry hero, and another where the chase is absent, and a fourth from which nothing is recorded [166, 168].

A continental pattern with a male exception, a chase-less exception and a silent exception is a pattern with real edges, and the edges are where the explanation lives.

Grade: established as the distribution; the inference is supported.

The Third: The Calendar Survives Every Transformation

Across four cultural areas, hundreds of languages, a sex change, a count change, the loss of the pursuit and the total loss of the record in Tasmania, one thing does not alter. The cluster tells people what season it is and what to do in it.

Winter begins. Burn now. Travel now. Plant now. Take the puppies now. The food is coming and the sea will be full.

Johnson put it better than this study can, surveying a continent where shared astronomy is rare: the cluster is common to all groups across the continent, and the interpretations vary [168].

Grade: established. Two rungs of the ladder, two continents, and the calendar is still the only column that is full.

> ✦ Practice: the coals at dawn Breathe in and think of the cold coming. Soft pause of two counts. Breathe out slowly, as if sending warmth upward. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER TWO

Held after Greece, tested by Australia, still standing: - The calendar is the constant. Two for two. - The pursuit follows from the rising order and needs no transmission. Strengthened. - The missing member is explained differently everywhere it appears. Strengthened: Australia adds abduction-and-recovery to Greece's shame-and-dimming.

Revised by Australia: - The story-and-rite inverse law from Deep Pass One. **Reduced from hypothesis to a single case.** Greece lost its rite and kept its story. Australia kept both. The law does not hold.

New after Australia: - The sky supplies the premise; cultures supply the ending, and the endings are contrary. - A continental pattern can contain its own counter-cases, and the Torres Strait is one.

Next rung: South Asia, which has to be tested against this, because it has a missing sister who is not lost at all, and because Berezkin suggests it may be the southeastern end of a Eurasian belt rather than an independent witness.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. Nothing restricted was sought or recorded. Where the only published source is a colonial-era collector, the text says so. The author reads everything and decides what goes on the page.

South Asia · The Cutters, and the Wife Who Could Not Be Imitated

Why South Asia is the third rung

Two rungs are up. Greece gave us a story sitting on top of a sailing calendar, with three incompatible explanations for the missing seventh. Australia gave us the same premise written by the sky and an opposite ending written by the law, plus its own counter-case in the Torres Strait where the cluster is six men.

South Asia is the third rung for two reasons, and the second one is a trap this pass has to walk into deliberately.

First, it offers a different solution to the same anomaly. Greece explains the missing sister by shame. Australia, where it explains her at all, explains her by abduction. India does something neither does: it names her, says exactly why she is not with the others, and points to where she is instead.

Second, Berezkin says India may not be an independent witness at all. He treats the seven Pleiades as wives of the seven sages, identified with Ursa Major, as linked indirectly to Central Asian and southern Siberian tales and probably elaborated in a late literary tradition. If that is right, India and Greece are two ends of one Holocene belt and not two separate confirmations of anything.

This pass tests both. And it finds something the first gather did not: that South Asia has the most developed **living ritual** attached to this cluster of any tradition on Earth, that one of those rituals is performed at weddings and is about the missing seventh star, and that the whole system can be watched losing its anchor to precession in writing.

THE THIRTEEN BREATHS

Breath 1. Sky

The Indian subcontinent runs from about 8 to 35 degrees north. From there the cluster is a winter and spring object, and the event that organises everything in this pass is one the Vedic texts state outright.

Around the third millennium BCE the vernal equinox sat in the Pleiades, so the cluster rose due east at the equinox. The Shatapatha Brahmana says so in an instruction: one should found one's fires under the Krittikas, and these do not swerve from the eastern direction, while all the other nakshatras deviate from it [178].

That is an observational claim, and it is datable. It held with precision around 2950 BCE, was still true about 2000 BCE, and was still true to within eight to thirteen degrees by the eighth to sixth centuries BCE, the assumed date of the text's composition [178, 179]. Subhash Kak reads the same statement as indicating the early third millennium [180].

So the Indian relationship with this cluster begins with a fact of alignment: at the moment the year turned, these stars came up exactly in the east. Everything else in this pass grows from that.

Grades. That the Shatapatha Brahmana says the Krittikas do not swerve from the east: established as the text. That this was precisely true around 2950 BCE and approximately true for two millennia after: established as astronomy. That it dates Vedic practice to the third millennium: contested, and much argued; the astronomy is solid and the inference about the text's age is not.

Breath 2. Name

Krittika means the cutters

The name comes from the Sanskrit root *kṛt*, to cut [180].

Pause on that, because it is unlike every other name in this study. The cluster has been called the digging stars, the rain stars, the group, the Stars, the heap, a cluster, gathered together, the Star Thing, the hairy head, the granary, the marketplace, the rattlesnake's tail, the little eyes, the daughters of the night, the sailing ones, and the daughters of Atlas.

India called them the cutters. Something with a blade or an edge. Not a group, not a tool for digging, not women, not a count.

In Tamil the cluster is Karthigai, and that name gives its name to a whole month of the calendar [181, 182].

Their presiding deity is Agni, the fire [183]. The cutters and the fire belong together, and so does the instruction to light the fire at their rising.

Grades. That Krittika derives from *kṛt*, to cut: established. That Agni is the presiding deity of the nakshatra: established. That the Tamil month is named for the cluster: established.

Breath 3. Form

South Asia holds two forms at once and they do not reconcile neatly.

The six nurses. In the Ramayana, Kartikeya is the first son of Shiva, incubated by the Krittikas, the six maidens representing the Pleiades [184]. He is born of six sparks, nursed by the six, and afterwards called Karthikeya after them [185]. In the Tamil account, Murugan took the form of six babies in the Saravana lake and was looked after by the six Krittika stars [186]. The Puranas say the six children were fused into one when Parvati embraced them, producing the six-headed Kartikeya [184, 187].

So the cluster is a set of **foster mothers**, and the god who grew up under their care carries their name and their number in his six faces. In Tamil he is Aarumugan, the six-faced [186].

The wives of the sages. In the Mahabharata material the Krittika are the wives of the Saptarishi, the seven sages who are the stars of the Great Bear.

Note that these are not the same thing. Nurses of a war-god and wives of sages are different social roles, and the second one brings the seven and the missing one with it.

Grades. That the Krittikas are the six nurses of Kartikeya: established across Ramayana, Puranic and Tamil sources. That they are the wives of the Saptarishi: established as a separate strand.

Breath 4. Number

India says six, and means it

This is the finding that should have been in the first gather and was not stated sharply enough.

South Asia's canonical number for this cluster is six, not seven. And it is six all the way down, structurally, not as a reluctant admission that one is invisible:

- six maidens who nursed the god [184]
- six sparks from Shiva [188]
- six faces, hence Shanmukha and Aarumugan [186]
- six babies in the lake [186]
- six lamps lit in Tamil homes at the festival, representing the six faces [188]
- six primary temples for Kartikeya in Tamil Nadu [184]

Where seven appears, it appears in the wives-of-the-sages frame, and there the seventh is **accounted for elsewhere**, which is Breath 6.

Grades. That six is the standard South Asian count: established. That the six is replicated in the god's faces, the sparks, the lamps and the temples: established.

Set that against the other rungs

Tradition	Says	Sees	How the gap is handled
Greece	seven	six	three incompatible stories of shame and mourning
Mainland Australia	seven	seven	not a structural concern
Torres Strait	six	six	no gap; six is simply the number
South Asia	**six**	**six**	**no gap; the seventh is in another constellation**

Two of the four traditions examined so far have no six-versus-seven problem at all, because they never claimed seven.

Breath 5. Story

The Mahabharata account, as the first gather gave it and as this pass can now place.

The seven sages perform a fire ceremony. Agni emerges from it and is enamoured of their seven wives. Svaha, who desires Agni, cannot reach him as herself, so she takes the form of the wives in order to lie with him. She succeeds with six. The seventh, Arundhati, is so faithful that Svaha

cannot assume her form at all [189]. The six, though entirely innocent, are abandoned by their husbands and become the Krittika [190].

And then the energy that passed through Agni becomes Kartikeya, who is nursed by the six and carries their name.

What is structurally unusual here

The sisters are innocent and are punished anyway. Greece has sisters taken by gods who then found dynasties. Australia has sisters unlawfully pursued who escape. India has wives who did nothing, who are impersonated by someone else, and who are cast out for a crime committed in their likeness.

The pursuer is a god, and the agent is a woman. Agni desires; Svaha acts. The mechanism of the story is impersonation, not chase.

And the cluster is a consequence of exile. The Krittika are in the sky because they were sent away from their husbands. Not rescued, not punished for a crime, not strung up by an angry hero. Banished for someone else's act.

Grade: established as the tradition.

Breath 6. Missing

This is the best breath in the study so far, and it is a living rite

Of the seven wives, Svaha could take the form of six but not of Arundhati [189, 191]. The six became the Pleiades. Arundhati stayed with her husband.

And she is visible. In Indian astronomy, Mizar is Vasishtha, one of the Saptarishi, and **Alcor, the faint star beside him, is Arundhati, his wife** [192, 193]. Of the seven visible stars of the Great Bear only one has a close companion, and the tradition made that companion the one wife who could not be imitated [189]. In the sky she sits just behind Vasishtha and to his right [191].

So the seventh is not lost. She is named, located, and still at her husband's side.

And the Hindu wedding points at her

This is what the first gather missed entirely.

After the Saptapadi, the seven steps, the couple is taken outside at night. The groom shows the bride first Dhruva, the pole star, the fixed star, and then Arundhati [194, 195, 196]. The wish is that the bride be stable like Dhruva and faithful like Arundhati [195]. In Tamil the pair of rites has its own phrase, *ammi midhitthu Arundhati pārthal*, the grinding stone and the sighting of Arundhati [191]. The groom and bride recite together that they hold Dhruva, Arundhati and the Saptarishi dear [194].

And the detail that matters most: **it is the only rite in the whole ceremony that requires the sky.** Almost everything in a Hindu wedding happens inside the mantapa. For this one the couple goes outdoors and the priest points upward [197].

What that means for the whole study

Every other tradition in this study treats the missing seventh as a problem to be explained. Greece gives three stories about why she dimmed. The Cherokee make the seventh a pine tree. The Onondaga make him a falling star. The Kamilaroi have five looking for two.

India alone turns the missing seventh into a liturgy. She is not absent, not ashamed and not mourned. She is shown, by name, to a bride, on her wedding night, as the model, and the pointing has been done for centuries and is still done.

That is the single most remarkable thing this study has found, and it is also the strongest possible evidence that the six-versus-seven anomaly is a locally solved problem rather than an inherited wound. India solved it so thoroughly that it built a wedding rite on the solution.

Grades. That Arundhati is identified with Alcor and Vasishtha with Mizar: established in the tradition and reported in the reference literature. That Svaha could not take Arundhati's form: established as the text. That the wedding rite shows Dhruva and then Arundhati after the Saptapadi: established, reported in Garg's *Encyclopaedia of the Hindu World* and Gopal's *India through the Ages* as cited [198], and in current practice. That it is the only rite in the ceremony requiring the sky: supported.

Breath 7. Pursuit

There is desire in this story, but there is no chase, and nothing in the sky corresponds to one.

Greece and Australia both have a male figure in Orion behind a female cluster, and in both the sky supplies the motion. India does not use Orion for this at all. The relation it uses is **the Pleiades and the Great Bear**, which are on opposite sides of the sky and do not pursue each other.

That is a significant structural fact. The Indian story is about a marriage, a fire, an impersonation and an exile, and it is mapped onto two constellations that have no visible relation of chase. The pairing is conceptual, not observational.

Which bears directly on Berezkin

Berezkin's claim is that the Pleiades-and-Ursa-Major pairing is the Eurasian pattern, that the dominant form is seven men in the Bear who take a girl from the Pleiades, and that the Indian version is a late literary elaboration of tales from the southern Siberian and Central Asian region. He also notes that the Pleiades and Ursa Major are often associated in Eurasian folktales, and that in North America the two are never mentioned together.

This pass supports him on the structural point. The Indian story pairs exactly those two constellations, in exactly that relation of men-in-the-Bear to women-in-the-Pleiades, and it does so without any observational motion to motivate it. A pairing with no sky mechanism behind it is a pairing that had to come from somewhere.

And this pass qualifies him on the dating. The wives-of-the-sages story may well be later and may well be connected across the steppe. But Krittika as the first nakshatra, with the instruction to light the fire at its eastern rising, is from the Brahmanas and is about the calendar. That layer is early, observational and local, and it has nothing to do with wives, sages or abduction.

Which is the Greek finding again, in a second tradition. The calendar layer is older than the story layer. In Greece the sailing name came first and the sisters interpreted it. In India the eastern rising and the fire came first, and the wives arrived later and possibly from outside.

Grades. That the Indian story pairs the Pleiades with Ursa Major and not with Orion: established. That the pairing has no observational basis in relative motion: established. That the wives-of-the-sages strand may derive from a Central Asian prototype: contested, and Berezkin's proposal. That the calendar layer is older than the story layer in India: supported.

Breath 8. Year

Krittika is the **first** of the nakshatras in the earliest Vedic lists: the Atharva Veda, the Taittiriya Samhita, the Taittiriya Brahmana and the Shatapatha Brahmana all begin with it [199, 200].

It is first because it held the vernal equinox. Jacobi argued in 1909 that its primacy was due to its rising in the east at the equinox when the rituals were being established, and that this places the beginning of Vedic practice between about 3000 and 2000 BCE [201]. The Shatapatha Brahmana, around 1000 to 700 BCE, instructs the lighting of an auspicious sacrificial fire at the time of Krittika's rising in the east, because the cluster rises invariably due east, and it was plainly restating an older observation [201].

So the Pleiades were the head of the Indian year, and the moment to light the fire.

And the Tamil month of Karthigai still carries the name [182, 202], falling in November and December [202].

And then precession took it away

This is the finding that no other rung has given, and it is the only place in the study where the calendar function can be watched decaying with dates attached.

The vernal equinox moved out of the Pleiades. Because of precession it is now Pisces, not the Pleiades, that rises due east at the spring equinox [201]. And the nakshatra lists changed to follow: the earliest lists begin with Krittika, and much later lists, dating from the sixth century CE, begin with Ashvini, when the vernal equinox had moved to the border of Revati and Ashvini [180].

The Pleiades were demoted, in writing, by the sky. They held first place for two or three thousand years because they marked the turn of the year, and when they stopped marking it they lost the place.

What survived the demotion is the story and the festival. What was lost was the function.

Grades. That Krittika heads the earliest nakshatra lists: established. That its primacy reflects its equinoctial rising: established as the standard explanation. That later lists re-headed with Ashvini after the equinox moved: established. That this is a documented case of a Pleiades calendar function decaying by precession: supported, and this study's own inference from the two facts.

Breath 9. Rite

South Asia has the most developed living ritual of any tradition in this study

Two rites, and they are of different orders.

Karthigai Deepam, the Tamil festival of lights. It is held on the full moon of the Tamil month of Karthigai, when the moon stands in Krittika, which puts it between mid-November and mid-December [202]. The date is set by the nakshatra: the moon must be in Krittika [202]. Homes are lined with rows of clay lamps at dusk, and **six lamps are traditionally lit, representing the six faces of Murugan** [188].

The great observance is at the Arunachalesvara temple at Tiruvannamalai, where the Maha Deepam is lit on the summit of Arunachala hill on that night [203, 204, 205]. The festival commemorates Shiva appearing as a column of fire cooled into the hill, the Krittika star and the six Krittikas who raised Murugan, and an ancient Tamil festival of lamps [205]. It is associated with the origin of Kartikeya and with Shiva's manifestation as a Jyotirlinga [206]. A reference to the festival of lights is found in Ahananuru, the old Tamil poetry [186].

Arundhati darshan, the wedding rite. Treated in Breath 6. Performed at traditional Hindu weddings, outdoors, after dark, pointing at the seventh star.

Which settles the question Deep Pass One raised

Deep Pass One proposed an inverse law: most story, least rite. Australia already broke it. South Asia buries it.

Tradition	Story	Rite
Greece	fullest on Earth	none attested
Australia	very full	ceremony, performance, art, law, coal-casting
South Asia	**very full**	**a lamp festival on a hill, and a rite at every wedding**

Three rungs, and only Greece has the asymmetry. The pattern is not a law about story and rite. It is a fact about Greece: **Greece is the tradition that stopped using the cluster and kept talking about it.**

Grades. That Karthigai Deepam is dated by the moon's position in Krittika: established. That six lamps represent the six faces: established as the tradition's own explanation. That the Maha

Deepam is lit on Arunachala on that night: established. That Arundhati darshan is a standing element of traditional Hindu weddings: established as reported in the reference literature and in current practice.

Breath 10. Land

Arunachala hill, at Tiruvannamalai in Tamil Nadu. The Arunachalesvara temple at its foot, and the Maha Deepam on its summit [203, 204]. Shiva is held to have appeared there as a column of fire that cooled into the hill [205].

The six houses of Murugan. Tamil Nadu has six primary temples for Kartikeya [184], the Arupadai Veedu, and his number is their number.

Saravana lake, where Murugan took the form of six babies and the six Krittika stars looked after him [186].

So the anchoring is to temple, hill and lake, and it is replicated six times over in the god's six houses. It is not a songline and it is not a commemorative mountain name. It is a built landscape, with fire on top of it on the right night.

Grade: established.

Breath 11. Word

Carried in **four media at once**, which no other tradition in this study manages.

- **Recited text.** The Vedas, the Brahmanas, the Mahabharata, the Puranas, the Skanda Purana and the Tamil Kanda Puranam, transmitted by recitation and by manuscript for three thousand years.
- **Calendar.** The nakshatra system, used for ritual timing continuously, which embeds the cluster in the structure of time itself rather than in a story about it.
- **Festival.** Karthigai Deepam, performed annually at scale.
- **Domestic rite.** Arundhati darshan, performed at weddings, which puts the transmission inside the family and makes every married couple a carrier.

That last one is the strongest transmission mechanism in the whole study. A story in a book needs a reader. A songline needs a singer with the right standing. **A wedding rite needs only people getting married**, and it has been running on that for a very long time.

Grade: established.

Breath 12. Wound

South Asia is the one rung so far with no wound of destruction. The texts were not burned, the language was not lost, the practitioners were not removed. The tradition is continuous and alive.

Its wound is of a different kind, and it is the sky's.

Precession demoted the cluster. Krittika headed the nakshatra list because it rose due east at the equinox. The equinox moved. By the sixth century CE the lists had been re-headed with Ashvini [180]. The cluster that had been the first thing in the Indian year became the third thing, and today it is Pisces that rises due east at the spring equinox [201].

That is a wound without a perpetrator, and India handled it the way a living tradition does: it kept the name on the month, kept the festival on the night, kept the god with six faces, kept the bride looking at Arundhati, and quietly changed the list.

And one small modern wound worth naming. The astronomical identifications in the reference material are themselves worth checking. One careful survey notes that in Basham's *The Wonder That Was India* neither Mizar nor Alcor nor any other star of the Saptarishi figure appears [198]. Standard works on Indian culture can omit the stars that the ritual depends on.

Grades. That the earliest lists head with Krittika and later ones with Ashvini: established. That precession is the cause: established. That South Asia suffered no destruction of this tradition: established.

Breath 13. Return

What does South Asia say the cluster is for?

Three answers, and they are all instructions.

Light the fire. One should found one's fires under the Krittikas, because they do not swerve from the east [178].

Light the lamp. Six of them, on the night the moon stands in Krittika, for the six faces of the god the six stars raised [188].

Look up and be faithful. Go outside after the seven steps, find the pole star, then find the faint one beside Vasishtha, and be like her [195].

Fire at the turn of the year, lamps in the doorway, and a star shown to a bride. South Asia's cluster is for beginning things and for keeping them.

Grade: established as a reading of the texts and the practices.

WHAT WAS SEEN

Six foster-mothers who nursed a god born of six sparks and gave him six faces and their own name. The first of the nakshatras, rising due east at the turn of the year, under which the sacred fire is to be lit. A month named for them, and a festival of lamps on a hill.

WHAT WAS UNSEEN

That India never had the six-versus-seven problem, because India never claimed seven for this cluster. It claimed six, and put the seventh somewhere else, and can point at her.

And that the pointing is a rite. Every traditional Hindu wedding ends with a couple taken outdoors to find a faint star beside a bright one, and told to be like her. The missing seventh sister of the Pleiades, the one every other tradition in this study explains away with a story of shame or abduction or a fall, is in South Asia a named woman with an address in another constellation and a liturgy of her own, recited to brides.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude of the subcontinent	about 8° to 35° N	the cluster is a winter and spring object
Equinoctial alignment	the cluster rose due east at the vernal equinox around 2950 BCE	the reason Krittika heads the list [178, 179]
Precision window	exact at about 2950 BCE, true at about 2000 BCE, within 8 to 13 degrees by the 8th to 6th centuries BCE	the text restates an older observation [178, 179]
Precessional drift	the equinox has moved to Pisces	the cluster lost first place [201]
Re-heading of the list	Ashvini from about the 6th century CE	the documented demotion [180]
Mizar and Alcor separation	about 12 arcminutes	a genuine naked-eye test, and the physical basis of Arundhati [193]
Festival timing	full moon with the moon in Krittika, mid-November to mid-December	the lamp night [202]

The two geometric facts that carry this pass

The equinoctial rising is the whole foundation. Not brightness, not compactness, not the forty days of invisibility that mattered in Greece. India fixed on one fact: at the turn of the year these stars come up exactly in the east. A cluster four degrees off the ecliptic, at the right epoch, will do that, and for about three thousand years it did.

And Alcor is a real eyesight test. The faint companion twelve arcminutes from Mizar has been used as a vision test in several cultures. India built a marriage rite on seeing it. Which means that **in South Asia, being able to resolve a faint star beside a bright one is a thing brides are asked to do, publicly, as part of a ceremony.**

That is the eyesight question from the first gather appearing in an entirely unexpected place. A tradition that institutionalises the resolving of a close faint companion is a tradition whose members practise exactly the skill that deciding between six and seven Pleiades requires.

THE LEDGER

Claim	Grade
Krittika derives from *kṛt*, to cut	established
Agni is the nakshatra's presiding deity	established
The Shatapatha Brahmana says the Krittikas do not swerve from the east	established as the text
That statement was precisely true around 2950 BCE	established as astronomy
It dates Vedic practice to the third millennium	contested
The Krittikas are the six nurses of Kartikeya	established
Six is the canonical South Asian count	established
The six is replicated in faces, sparks, lamps and temples	established
Svaha could take the form of six wives but not Arundhati	established as the text
Arundhati is Alcor and Vasishtha is Mizar	established in the tradition
The wedding rite shows Dhruva then Arundhati after the Saptapadi	established
It is the only rite in the ceremony requiring the sky	supported
The Indian story pairs the cluster with Ursa Major, not Orion	established
That pairing has no basis in relative motion	established
The wives-of-the-sages strand derives from a Central Asian prototype	contested, Berezkin's proposal
The calendar layer in India is older than the story layer	supported
Krittika heads the earliest nakshatra lists	established
Later lists re-head with Ashvini after the equinox moved	established
Karthigai Deepam is dated by the moon's position in Krittika	established
Six lamps represent the six faces	established as the tradition's explanation
South Asia's tradition suffered no destruction	established
The story-and-rite inverse law	**not supported**; it is a fact about Greece alone

NEAR-TRUTHS

- **The cutters.** India's name for this cluster is about an edge, not a group and not a count. Of all the names gathered, it is the one with no obvious visual motivation, and it is attached to fire.
- **Six, honestly.** Two traditions so far say six and mean it: the Torres Strait and South Asia. Neither has a lost sister because neither lost one.
- **The seventh has an address.** Of the seven visible stars of the Bear, exactly one has a close companion, and the tradition put the one unimitatable wife there. That is a precise mapping of a story onto a sky, and it solves the count.
- **And the solution became a sacrament.** The one tradition that located the missing sister is the one tradition that performs a rite about her, at weddings, outdoors, under the sky.
- **The demotion is the rarest find in the study.** Precession took the cluster's first place and the written record shows the lists changing to follow. We can watch a Pleiades calendar function die, with dates.

THREE ILLUMINATIONS

The First: The Function Is Older Than the Story, Twice Now

Greece: the name means the sailing stars, and the sisters are a later interpretation of it.

India: the cluster heads the nakshatra list because it rose due east at the equinox, and the instruction is to light the fire; the seven wives, the impersonation and the exile come later and may have come from the steppe.

Two traditions, on two continents, with entirely different stories, and in both the **observational use is demonstrably the deeper layer** and the narrative sits on top of it.

Grade: supported, and now on two independent cases. This is the first gather's calendar finding hardening into something stronger than a distribution count: not merely that everyone uses the cluster for time, but that in the traditions where we can date the layers, the use came first.

The Second: India Solved the Anomaly and Built a Rite on the Solution

The six-versus-seven problem is the engine of the whole hundred-thousand-year proposal. India dissolves it. It says six, which is what the eye sees. It names the seventh, which is Arundhati. It puts

her beside Vasishtha in the Great Bear, which is where Alcor actually is. And it tells brides to look at her.

A tradition that had inherited a memory of a seventh Pleiad would not do this. A tradition confronting the same arithmetic everyone confronts, with the Great Bear conveniently supplying a faint companion to one of seven, would do exactly this.

Grade: supported. And it brings the count of independent solutions to the missing-member problem to seven mechanisms across five traditions, which is the signature of a shared problem and not a shared memory.

The Third: The Strongest Carrier Is a Wedding

This study has now seen the cluster carried by manuscript, by songline, by performance, by painting, by proverb, by a verb root in everyday speech, by an annual act of observation, and by a lunar mansion list.

South Asia adds the most durable carrier of all. Arundhati darshan needs no scribe, no singer with standing, no temple and no literacy. It needs two people getting married and a clear sky. It has therefore run continuously through conquest, colonisation, translation and modernity, and it is running tonight.

And what it carries is not the cluster. It is the one star that is **not** in the cluster, and the reason she is not.

Grade: supported.

> ✦ Practice: Dhruva, then Arundhati Breathe in and find the thing in you that does not move. Soft pause of two counts. Breathe out and find the faint thing beside it that has not left. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER THREE

Held and strengthened: - The calendar is the constant. Three for three. - **New and stronger: in traditions where the layers can be dated, the function is older than the story.** Greece and India, independently. - The missing member is solved differently everywhere it is solved. Now seven mechanisms across five traditions.

Dead: - The story-and-rite inverse law. Australia broke it, South Asia buried it. It is a fact about Greece alone, and the fact is that Greece stopped using the cluster and kept talking about it.

New after South Asia: - Two traditions say six and mean it, and neither has a missing sister. - A calendar function can be watched decaying by precession, in writing, with dates. - A rite can be a better carrier than a text. - The eyesight question has a ritual instance: India asks brides to resolve a close faint companion.

Next rung: Siberia and the steppe, which Berezkin says is where the Eurasian pattern comes from, and which has to be tested against what India just showed, because if India's wives-of-the-sages strand came from there, then two of this study's four confirmations of the sisters motif are one.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. Several of the ritual sources here are devotional and popular rather than scholarly, and are cited as reports of current practice rather than as philology; the Arundhati wedding rite in particular should be confirmed against a specialist on Hindu domestic ritual before the study prints it. The Vedic dating debate is contested and is marked as such. The author reads everything and decides what goes on the page.

Siberia and the Steppe · The Seven Men and the Stolen Girl

Why this is the rung that changes the book

Three rungs are up. Greece: the sisters are younger than the name, and the name means the sailing stars. Australia: the sky writes the premise and each people writes its own ending, and the Torres Strait writes six men. South Asia: six, honestly, with the seventh given an address in another constellation and a wedding rite built on her.

This rung is different from the three before it. The others were traditions. This one is a **mechanism**.

Yuri Berezkin has spent decades building a formal database of folklore motifs and their areal distribution, with motif codes, maps and statistics. His catalogue contains a motif coded **b46a, the stolen star of the Pleiades**: one of the stars of the Pleiades was separated from the others, usually abducted, by stars of the Big Dipper, and is now seen among them [207].

That is not a story about one people. That is the shape of the thing itself, with a distribution attached. And when this pass follows it, two of the three rungs already climbed turn out to be the same rung.

THE THIRTEEN BREATHS

Breath 1. Sky

The belt runs from the eastern Baltic to the Sea of Okhotsk, between roughly 40 and 60 degrees north: the Kazakh and Kirghiz steppe, the Altai, Tuva, Khakassia, Mongolia, and the Siberian forest north of them.

At these latitudes two things about the sky differ sharply from the Mediterranean and from Australia.

Ursa Major never sets. At 50 degrees north and above the Great Bear is circumpolar, wheeling round the pole all night, every night of the year. It is the one grouping that is always there.

The Pleiades do set, and their disappearance means cold. When the cluster rises in the east with the sunrise, the cold and somewhat rainy season is coming [208].

That asymmetry is the key to the whole region. A people watching a sky in which seven stars never leave and a small cluster comes and goes will not treat the two the same way. The permanent thing becomes a body of men. The visiting thing becomes a crowd, and a marker of the cold.

Grade: established as astronomy.

Breath 2. Name

Ülker, and what it actually means

Across most modern Turkic languages the cluster is **Ülker**, and in Kazakh and Kirghiz **Ürker** [209, 210].

The meaning is recorded by Mahmud al-Kashgari in the *Dīwān Lughāt al-Turk*, completed around 1077, and analysed by Sir Gerard Clauson in his etymological dictionary of pre-thirteenth-century Turkish. Kashgari gives ülker for the Pleiades and a second meaning: in war, an ambush is called *ülker čerig*, and he explains the tactic. The army is broken up into detachments posted in various places, and when one detachment falls back the others follow after it, and by this device the enemy is often routed [211].

Clauson's gloss: *ülker čerig* means literally an army made up of a group of detachments, and it is a good simile for a group of stars [211]. Another study notes that the Turks called this famous war tactic the Pleiades line [212]. And Clauson adds a judgement that matters: Kashgari alone gives the second meaning, but since most Turkish star names are metaphors drawn from other objects, it is possible that **this was the original meaning** [211].

So the Turkic name for the Pleiades may be a military formation. Scattered detachments, deployed apart, supporting one another, and able to rout an enemy by falling back and following on.

The cluster appears in the *Kutadgu Bilig* of 1069 in a line about the Pleiades declining [211].

And the number is somewhere else

Here is the structural fact that reorganises this study.

Kazakh name	What it is
Ürker	the Pleiades [213]
Zheti Qaraqshy, seven robbers	the Big Dipper [213]
Zhetigen, seven	the Big Dipper [213]
Zheti Qart, seven elders	the Big Dipper [213]
Temir Qazyq, iron pole	the North Star [213]

And in Mongolia, **Doloon burkhan**, the Seven Gods, is the Big Dipper, with Altan Gadas, the Golden Stake, as the pole star [214]. A Mongolian legend has a younger brother who passed a test and became the pole star, and seven others who became the seven gods and visit him every night [214].

Across the Turkic languages the seven-words cluster on the Bear: *yetti yulduz*, seven stars; *jetigen*, seven together; and related forms meaning seven thorns, seven stakes, small seven brothers [209].

In the heartland of the seven motif, the seven belongs to Ursa Major. The Pleiades is named for clustering, with no number in the name at all.

Which makes Ülker the tenth of the Gathered Together

The second gather assembled nine traditions that named this cluster for nothing but its clustering. Ülker makes ten, and it is the most vivid of them. Subaru says gathered together. MUL.MUL says the Stars. Tagemmunt says the group. Kimah says a heap. Ülker says **a deployment of detachments**.

Grades. That Ülker is the Pleiades across most Turkic languages: established. That Kashgari gives ülker čerig as an ambush formation and explains the tactic: established as the text. That the military sense may be the original: supported, on Clauson's judgement. That the seven-words attach to Ursa Major and not the Pleiades in Turkic and Mongolian: established.

Breath 3. Form

A crowd, or a group of persons, or chickens, and in one well-attested Siberian case, game.

Berezkin notes that the paper record gives few meanings for Eurasian Pleiades cosmonyms, and that the cluster is generally described as a group of persons, as girls or wives or simply as the people in the tales, or as chickens [215].

The Bear, by contrast, has a fixed and vivid form: seven men. Berezkin calls seven men the most widespread Eurasian and North American interpretation of Ursa Major, with Alcor as a dog or a younger person, and holds that it must have been known across the moderate zone of Eurasia since at least the Terminal Palaeolithic, and that it was carried from southern Siberia to the North American Plains [216]. In Turkic and Mongolian tales the seven are strong men or robbers, and some have special skills, one a runner, one a shooter [216, 217].

So in this region the Pleiades has no strong form of its own. It is the undifferentiated many, next to a highly differentiated seven.

Grade: established on Berezkin.

Breath 4. Number

No fixed number for the cluster, which is the finding.

Where numbers do attach to the Pleiades in the wider Eurasian material they are European rather than steppe, and they are late: the Spanish *Siete cabrillas*, seven kids, that is young goats [215]; and the Belarusian family of seven-names, Siamizviozdacka, Siamiarycki, Siemizviezdzica and Siemik, alongside the Sieve and the description of the cluster as a heap of stars to tell the time.

In the Turkic and Mongolian core the number on the table is seven and it is the Bear's.

Grades. That no fixed count attaches to the Pleiades in the Turkic-Mongolian core: supported, on the absence in Berezkin's survey and the presence of Ülker as a group name. That the European seven-names for the cluster exist and are regional: established.

Breath 5. Story

The Eurasian tale, in Berezkin's words and distribution

In Eurasian tales, seven men identified with the stars of Ursa Major **have a girl who originally belonged to the Pleiades** [215].

Berezkin lists where it is recorded: **Ancient Greek, Bulgarian, Kumyk, Nogai, Kazakh, Kirghiz, Altai, Tuvinian, Khakas, and several Mongolian groups** [215]. He proposes that these tales most probably developed from a unique prototype in the southern Siberian and Central Asian region [215].

And the Hindu version, in which the seven Pleiades are the wives of the seven sages identified with Ursa Major, he links to that same Central Asian and southern Siberian group, while treating it as a late literary elaboration [215].

In North America, Ursa Major and the Pleiades are never mentioned together [215].

Read the list again

Ancient Greek is in it.

Berezkin puts the Greek tradition inside the same Eurasian group as the Kazakh, Altai, Tuvinian and Mongolian tales, deriving from one steppe prototype. And he puts the Indian tradition in it too.

If that is right, then this study's second and third rungs are not two independent confirmations of a seven-sisters motif. **Greece and India are the western and southeastern ends of one Holocene diffusion, and its centre is southern Siberia.**

Which means the Norrises' observation that the Greek and Aboriginal Australian stories share three specific elements loses its most important support. The Greek story is no longer an independent witness from the Mediterranean. It is the far western terminus of a belt, and the belt is thousands of years old rather than a hundred thousand.

The cosmic hunt, and where the Pleiades sit in it

Berezkin's other great Eurasian motif is the Cosmic Hunt, in which stars or constellations are hunters, their dogs, and the game they pursue [207]. It is peculiar to northern and central Eurasia and to the Americas and seems absent elsewhere [218].

The Pleiades appear in it, in a specific band. The Cosmic Hunt is linked to the Pleiades, along with Cassiopeia and Gemini, in Northern Europe, northern and northeast Asia, and the American Arctic [215]. Among the Sami, the Pleiades, Orion and Ursa Major all appear in the tale [215]. **A Lamut, that is Even, story identifies three hunters pursuing a mountain goat with the Pleiades** [215]. In South America the participants are Orion, the Pleiades or the Southern Cross [215]. In the Bambara version the Pleiades and the Hyades are antelopes of two species [215].

So in the Siberian forest the cluster can be the hunters, or the game. Not sisters. Not pursued women. **Hunters pursuing a goat.**

And why the Bear is not in the hunt here

Berezkin's explanation is simple and it closes the circle. In Turkic and Mongolian traditions Ursa Major is never associated with the Cosmic Hunt, because there the seven stars already have another interpretation: strong men, or robbers [215, 217].

The Bear's seven slots are already filled. So the hunt had to go elsewhere, and in this region it went to Orion and the Pleiades.

Grades. That the seven-men-and-the-girl-from-the-Pleiades tale is recorded among the peoples Berezkin lists, including the ancient Greeks: established as his survey. That they derive from one southern Siberian or Central Asian prototype: contested, and Berezkin's own proposal. That the Hindu version belongs to the same group: contested, same. That the Cosmic Hunt attaches to the Pleiades in the northern band: established on Berezkin. That Ursa Major is absent from the Turkic-Mongolian hunt because its stars are already men: supported, and Berezkin's only explanation.

Breath 6. Missing

The motif has a code, and the code changes the question

Berezkin's analytical catalogue lists, under the Ursa Major group:

b46a. Stolen star of the Pleiades. One of the stars of the Pleiades was separated from the others, usually abducted, by stars of the Big Dipper, and now is seen among them [207, 219].

Stop and see what that says. Not that a seventh sister dimmed in shame. Not that she hid her face. **That a star was taken out of the cluster by the seven men of the Dipper, and can now be seen among them.**

And the star that is seen among the Dipper's stars, faint beside a bright one, is Alcor.

Which means South Asia is an instance, not an invention

Deep Pass Three found India's handling of the missing seventh to be the cleanest in the study: Arundhati, the one wife Svaha could not impersonate, is not lost but located, as Alcor beside Mizar in the Great Bear.

That is motif b46a with names on it. A star separated from the Pleiades, now seen among the stars of the Dipper.

Deep Pass Three was right that India's *rite* is unique. It was wrong to imply that India's *solution* was independently arrived at. The solution is a Eurasian motif with a distribution, and India is one point in it. Berezkin says so directly when he treats the Hindu version as a late literary elaboration of the Central Asian group [215].

This is the first time in the ladder that a later rung has corrected an earlier one on a point of substance, and the correction stands.

What is still India's own

The rite. The pointing at a bride. The grinding stone and the sighting. Motif b46a does not come with a liturgy; India built one.

Grades. That b46a is a recognised motif with an areal distribution: established as the catalogue. That Arundhati is an instance of it: supported, and this study's inference from the motif definition and the Indian identification. That India's wedding rite is its own: established.

Breath 7. Pursuit

The pursuit here runs in the opposite direction from Greece and Australia, and it is not Orion who does it.

The seven men take the girl. They are not behind her, following forever and never catching her. They have her. The tale is told from the position of possession, not of chase.

And the men are not sympathetic. In Kazakh they are *Zheti Qaraqshy*, the seven robbers [213]. In Turkic and Mongolian tales they are strong men or robbers [216].

So the Eurasian core version is a theft that succeeded. Greece has an eternal unsuccessful chase. Australia has an unlawful chase that fails. The steppe has an abduction that worked, and the evidence is that you can still see her over there with them.

That is a much better fit to the sky than either of the others, because it explains something the chase stories do not: **why there is a faint extra star in the Dipper at all.**

Grades. That the Eurasian tale has the seven in possession of the girl rather than pursuing her: established on Berezkin's wording. That the seven are characterised as robbers in Turkic tradition: established.

Breath 8. Year

The cluster marks the cold.

When the Pleiades rise from the east with the sunrise, the cold and somewhat rainy season is coming [208]. The *Kutadgu Bilig* of 1069 has a line on the cluster declining [211]. And Turkic nomads measured almost all their life activity by the stars [213].

But the calendrical weight in this region is distributed differently from anywhere else in the study. Where Greece hung a farming almanac on the Pleiades and India hung a nakshatra system on them, the steppe has the pole star as the fixed point, the Bear as the permanent wheel, and the Pleiades as the thing that comes and goes and brings the cold with it.

And this is the only region in the study where the Bear is a timekeeper and the Pleiades is not the primary one. Berezkin gives the reason from the other end: in sub-Saharan Africa Ursa Major was largely ignored, though Bantu and Mande speakers knew it, because circumpolar stars are not useful for counting calendar time [215]. At 10 degrees north the Bear is low and useless. At 55 degrees north it never sets and can be read like a clock face all night.

Latitude decides which star group becomes the calendar. That is the geometric point of this pass and it is treated in the geometry section.

Grades. That the cluster's dawn rising marks the coming cold: established. That Turkic peoples timed life by the stars: established. That circumpolar stars are useless for calendar counting at low latitude and useful at high latitude: established as astronomy, and Berezkin's own explanation for the African pattern.

Breath 9. Rite

This pass found no rite directed at the Pleiades in the Turkic-Mongolian material, and that absence should be read with care rather than used.

What is there is a deity. **Ülgen**, or Bai-Ülgen, the Turkic creator who dwells in the sky, is given the Pleiades as his symbol [220]. His name is from Old Turkic *bay*, rich, and *ülgen*, magnificent, and he is held to be without beginning or end [220].

The resemblance between Ülgen and Ülker is close enough to be noticed and this study does not build on it. Whether the deity's name and the cluster's name are related is a question for a Turkologist, and it is flagged rather than answered.

The reference literature for this region is thinner in English than for Greece, India or Australia, and the religious material of Siberia and the steppe is enormous. **The absence of a recorded Pleiades rite here is almost certainly an absence in this pass and not in the traditions**, and the Tasmania lesson applies: a gap in the record is not a gap in the world.

Grades. That the Pleiades is given as Ülgen's symbol: established as reported. That no Pleiades rite exists in these traditions: **not supported**; this pass simply has not found one and the literature it reached is thin.

Breath 10. Land

Not a site. A **route**.

Berezkin's whole case is geographic: a prototype in the southern Siberia and Central Asia region, spreading west to the Balkans and Greece, southeast to India, and east and across to the North American Plains, where the seven men of the Bear arrived from southern Siberia [216].

So the anchoring of this tradition is not a hill or a temple or a waterhole. It is the steppe corridor itself, the same corridor along which horses, metal, language and people moved. The story travelled on the roads that everything else travelled on.

And that is checkable in a way a Dreaming or a genealogy is not. **A diffusion hypothesis predicts a distribution, and distributions can be mapped and tested.** Berezkin has mapped this one, and he has also processed the areal distribution of 615 motifs statistically [221].

Grade: contested as a specific route; established as a method.

Breath 11. Word

Carried by **folktale**, which is the least prestigious and most mobile medium in the whole study.

Not scripture, not songline, not almanac, not liturgy. Ordinary stories told by ordinary people, written down by ethnographers in the nineteenth and twentieth centuries, and now coded, mapped and counted in a database [219, 222].

Folktale is the ideal carrier for a motif that crosses language boundaries fast and leaves no linguistic trace. It needs no institution. It survives conquest and conversion, because nobody thinks it matters enough to suppress.

Which is exactly why a motif can be widespread, consistent, and only a few thousand years old.

Grade: established.

Breath 12. Wound

Two wounds, and the second is the one this study should worry about.

The Soviet century. Shamanic practice and oral tradition across Siberia and Central Asia were suppressed, and the recording of them was done under a particular ideology.

And the language barrier. Berezkin's primary work and the great bulk of the Siberian and Central Asian ethnography are in Russian. His analytical catalogue is partly available in English wordings and maps [219, 223], and a derivative database now presents the Berezkin and Duvakin catalogue of motifs in English [222]. But the actual tale texts, the regional surveys, and the Radloff Readings paper that is specifically titled for the Eurasian areals of cosmonyms for the Pleiades [224] are not reachable in English translation from where this pass stands.

So the single most important body of evidence about the Pleiades motif's distribution is one this study has access to only at second hand. That must be stated in the ledger and not glossed over. Everything in this pass rests on one conference paper, one catalogue of motif definitions and a handful of summaries.

Grades. That Berezkin's catalogue and papers are the principal resource for this question: established. That this pass has read them in full: **not supported**. The study is working from English-language versions and summaries, and the Pleiades-specific paper has not been read.

Breath 13. Return

What does the steppe say the cluster is for?

It says the cold is coming. And it says, in the oldest Turkic dictionary we have, that a scattered formation holding together is how a smaller force defeats a bigger one: break into detachments, post them apart, and when one falls back let the others follow [211].

The Pleiades line. A thing that works by being many and apart and still one.

Grade: established as Kashgari's text; the reading of it is symbolic.

WHAT WAS SEEN

Seven men in a Bear that never sets, called robbers and elders and gods, who took a girl out of the Pleiades, and she can be seen among them still. A cluster named for a battle formation. And the cold arriving when it rises.

WHAT WAS UNSEEN

That the seven was never the Pleiades' number in this region. It is the Bear's.

Kazakh gives the Bear *Zheti Qaraqshy*, seven robbers, *Zhetigen*, seven, and *Zheti Qart*, seven elders. Mongolia gives it *Doloon burkhan*, the Seven Gods. Turkic languages pile up seven-words on it. And the Pleiades, across the whole belt, is **Ülker**, which has no number in it at all and may originally have meant a deployment of troops.

And that the lost Pleiad, here, is not a seventh of seven who dimmed. She is one of many who was **stolen by the seven**, and she is visible where they put her.

Which is Alcor. Which is Arundhati. Which means India did not solve the six-versus-seven problem independently; India received a Eurasian motif and built a sacrament on it.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude of the belt	about 40° to 60° N	high enough for the Bear to be circumpolar
Circumpolar limit for Ursa Major	the Bear never sets above roughly 41° N	the Bear becomes the permanent clock
The Bear at 10° N	low, grazing the horizon, often invisible	circumpolar stars are useless for calendar counting there [215]
Mizar and Alcor separation	about 12 arcminutes	the physical fact that motif b46a explains
Pleiades dawn rising in the belt	marks the coming of cold and rain [208]	the calendar role, secondary here
Ursa Major's seven stars	one, Mizar, has a naked-eye companion	the only slot in which a stolen star could be put

The two geometric findings of this pass

First: latitude decides which group becomes the calendar, and it decides which group gets the number seven.

Above about 41 degrees north the Bear never sets. It wheels round the pole all night and can be read like a hand on a dial. Below about 20 degrees it skims the horizon and is useless, which is precisely Berezkin's explanation for why Bantu and Mande speakers knew Ursa Major but ignored it [215].

So the high-latitude belt gave its seven-count and its men to the circumpolar group, and left the Pleiades as the undifferentiated visitor that brings the cold. The tropics and the mid-latitudes, having no usable circumpolar clock, gave everything to the Pleiades.

The geography of the seven is a geography of latitude.

Second: the stolen star explains a real feature of the sky, and the chase stories do not.

There is a faint star twelve arcminutes from Mizar. Something has to account for it. Motif b46a does: she was taken from the cluster and put there.

Greece's three stories of a dimming sister explain an absence. The steppe's one story explains a **presence**, and the presence is actually there, and anyone with good eyes can check it.

An explanation that predicts an observable is a better explanation. That is why this motif is coherent across ten peoples while Greece could not settle on one version among three.

THE LEDGER

Claim	Grade
Ülker is the Pleiades across most Turkic languages	established
Kashgari gives *ülker čerig* as an ambush formation and explains the tactic	established as the text
The military sense may be the original meaning	supported, on Clauson
Seven-words attach to Ursa Major, not the Pleiades, in Turkic and Mongolian	established
Ülker is the tenth member of the Gathered Together family	supported
Seven men is the dominant Eurasian and North American reading of Ursa Major	established on Berezkin
The seven-men-and-the-girl tale is recorded among the ten groups Berezkin lists, including ancient Greek	established as his survey
It derives from one southern Siberian or Central Asian prototype	contested, Berezkin's proposal
The Hindu version belongs to the same group	contested, same
Greece and India are two ends of one Holocene belt	**contested, and the most consequential open question in this study**
Motif b46a, the stolen star of the Pleiades, is a recognised motif with a distribution	established as the catalogue
Arundhati is an instance of b46a	supported
India's wedding rite is India's own	established
The Eurasian seven possess the girl rather than pursue her	established
The cosmic hunt attaches to the Pleiades in a northern band	established on Berezkin
Ursa Major is absent from the Turkic-Mongolian hunt because its stars are already men	supported
Circumpolar stars are useless for calendar counting at low latitude	established
The Pleiades is Ülgen's symbol	established as reported
Ülgen and Ülker are etymologically related	**open**, flagged for a Turkologist
No Pleiades rite exists in these traditions	**not supported**; this pass has not found one and the literature reached is thin
This pass has read Berezkin's work in full	**not supported**

NEAR-TRUTHS

- **The Pleiades line.** The oldest Turkic dictionary records the cluster's name as a battle formation of scattered detachments that support each other and rout a larger enemy. Of all the names in this study it is the only one drawn from tactics.
- **The seven is the Bear's.** Seven robbers, seven elders, seven gods, seven men, seven together. English moved that number onto the wrong constellation and the whole six-versus-seven puzzle may follow from the move.
- **The stolen star explains something that is there.** Alcor exists. A motif that accounts for it beats three motifs that account for an absence.
- **And the correction is the real gift.** Deep Pass Three called India's solution the cleanest in the study. It is. It is also an instance of a motif that runs from the Balkans to Mongolia. The rite is India's; the answer was not.

THREE ILLUMINATIONS

The First: The Seven Belongs to the Bear

In the region where the seven-motif is strongest, oldest and most consistent, the number seven is attached to **Ursa Major**, not to the Pleiades. The Bear is seven robbers, seven elders, seven gods, seven together, seven men. The Pleiades is a cluster, a crowd, a deployment, a visitor that brings the cold.

The second gather established that the number seven has never been part of the Pleiades' name in any language, unlike modern English. This pass supplies the missing half: **the seven was not missing, it was next door.**

And the reason is geometric. Above about forty-one degrees north the Bear never sets, so it became the sky's permanent body of men, with one seat for each star. Below twenty degrees it is useless, so the Pleiades took on everything.

Grade: established for the distribution of the names; supported for the latitude explanation.

The Second: Two of This Study's Four Witnesses Are One Witness

Berezkin's list of peoples holding the seven-men-and-the-girl tale includes the ancient Greeks, and he links the Hindu version to the same southern Siberian prototype.

If that holds, then Greece and India stop being two independent traditions that happen to share a motif, and become the two ends of one Holocene diffusion whose centre is the steppe. The hundred-thousand-year proposal loses its western anchor, and Australia is left as the only genuinely independent instance of the female-cluster-pursued motif.

One motif, one corridor, a few thousand years. Not one memory, one species, a hundred thousand years.

Grade: contested, because it rests on one scholar's proposal, which he himself admits is built on data insufficient for reliable reconstruction. It is nonetheless the most consequential open question in this study, and the one that most needs a specialist.

The Third: An Explanation That Predicts Something Is Worth More Than Three That Explain an Absence

Greece produced three incompatible stories about why a seventh sister cannot be seen. Four other traditions produced four more mechanisms. Seven mechanisms, all accounting for a thing that is not there.

The steppe produced one, and it accounts for a thing that **is** there: a faint star beside Mizar, which you can go outside and look for, and which India asks brides to find.

The motif that survived across ten peoples from Bulgaria to Mongolia is the one that made a checkable prediction. That is not a bad test of a story.

Grade: supported.

> ✦ Practice: the Pleiades line Breathe in and let everything in you stand apart, in its own place. Soft pause of two counts. Breathe out and let one thing fall back, and the others follow it. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER FOUR

Held and strengthened: - The calendar is the constant. Four for four, though here the cluster shares the work with the Bear and the pole. - In traditions where the layers can be dated, the function is older than the story. Greece, India, and now the Turkic name, which is a tactic before it is a tale. - The missing member is solved differently in each region that solves it, and all but one solution explains an absence.

Dead: - The story-and-rite inverse law. Buried at rung three.

Corrected: - **Deep Pass Three overstated India's independence.** Arundhati is an instance of motif b46a, the stolen star of the Pleiades, which runs from the Balkans to Mongolia. The rite is India's own; the solution was received.

New after the steppe: - The seven belongs to Ursa Major, and latitude is why. - Greece may be the western end of a steppe belt rather than an independent witness, which would reduce this study's four confirmations to two. - An explanation that predicts an observable beats seven that explain an absence. - The whole region's evidence is behind a language barrier this study has not crossed.

Next rung: eastern North America, where the cluster is seven boys and one of them falls, and which Berezkin says is the one place where Ursa Major and the Pleiades are never mentioned together. If the steppe carried the seven men to the Plains, what happened to the girl?

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. Its central material is Berezkin's, read in English-language versions and summaries rather than in full and not including his Pleiades-specific paper, and that limitation is recorded in Breath 12 and in the ledger. The Ülgen and Ülker question is flagged for a Turkologist. Nothing here should be printed in the study until a reader with Russian has checked it. The author reads everything and decides what goes on the page.

The Eastern Woodlands · The Seven Boys and the One Who Fell

Why the woodlands are the fifth rung

Four rungs are up, and the fourth one did damage. Greece may be the western end of a steppe diffusion. India's elegant solution to the missing seventh turns out to be an instance of a Eurasian motif, b46a, the stolen star of the Pleiades. The number seven belongs to the Great Bear, not to this cluster, and latitude is why. What survives is the calendar, four for four, and the finding that in every tradition where the layers can be dated, the function is older than the story.

Eastern North America is the fifth rung because it attacks the pattern from the one direction nothing else has.

Here the cluster is boys. Not sisters, not wives, not gods, not a tool, not a granary. Seven children who would not do their chores, who danced, and who went up. And one of them did not make it.

The critic of the hundred-thousand-year proposal leans on this region harder than on any other, and rightly. If a single ancestral story carried the seven sisters out of Africa, here is a large, well-documented, continuously-held body of tradition where it is not sisters at all, and where the missing member is nonetheless present and vividly explained.

And this pass found something none of the first four did: **a tradition in which the story and the ceremony are the same dance.**

THE THIRTEEN BREATHS

Breath 1. Sky

The eastern woodlands run from roughly 35 to 46 degrees north: Cherokee country in the southern Appalachians, and Haudenosaunee country around the Finger Lakes, Lake Ontario and the St Lawrence.

At these latitudes the cluster is a winter object, and the moment that organises everything here is not the heliacal rising. It is the **zenith**.

In midwinter the Pleiades stand directly overhead in the evening. That is the signal, and three independent accounts give it: the Iroquois marked the New Year when the dancing boys were directly overhead at sunset [225]; Tehanetorens gives it as when they dance directly overhead, in the Moon of the New Year, January or February [226]; and the ceremony began five days after the first new moon following the zenith of the Pleiades [227].

This is the only region in the study where the cluster's culmination, rather than its rising or setting, is the marker. Greece watched it come out of the dawn. Australia and Polynesia watch the same. India watched it rise due east at the equinox. The woodlands watched it arrive at the top of the sky.

The cluster's position in the winter sky has long helped determine the Haudenosaunee ceremonial calendar, and its presence in the traditional stories reinforces the connection [239].

Grade: established.

Breath 2. Name

Cherokee: Ani'tsutsă, the Boys [228]. Stansbury Hagar also records Unadatsugi, the Group.

Onondaga: Oot-kwa-tah, which is given as meaning *there they dwell in peace* [225].

Hold those two side by side, because they are the two halves of this region's whole attitude. The Cherokee name says what they are: the boys. The Onondaga name says where they got to: at peace, at last, having been refused food and scolded and having gone.

Note also what neither name says. No number. No sisters. No tool. Ani'tsutsă and Oot-kwa-tah are a kinship word and a place word.

Grades. That Ani'tsutsă means the Boys and Unadatsugi the Group: established on Mooney and Hagar. That Oot-kwa-tah is glossed as there they dwell in peace: established as reported, from Beauchamp's Onondaga material.

Breath 3. Form

Children. That is the finding, and it is unique in the study so far.

Every other tradition examined makes the cluster adults, deities, animals, objects or crewmen. Here the cluster is a group of boys who were in trouble with their mothers. The Cherokee seven are children neglecting the cornfield. The Onondaga and Mohawk seven are children who were refused food and danced.

And the number seven is the Cherokee sacred number [229], which matters: the count here is not derived from looking and counting. It is the culturally complete number, applied.

Berezkin notes in passing that in some North American traditions Ursa Major is seven boys rather than adult men, citing Blackburn. So the child-form is not confined to the Pleiades in this hemisphere.

Grades. That the cluster is seven boys in Cherokee and Haudenosaunee tradition: established. That seven is the Cherokee sacred number: established. That the count follows the sacred number rather than observation: supported.

Breath 4. Number

Seven, firmly, and from the culture rather than the sky.

The Cherokee have seven clans and seven is their sacred number [229]. The Haudenosaunee story has seven children, sometimes called the Seven Dancers [226].

And then one is subtracted. In the Cherokee telling six reach the sky and the seventh is pulled back. In the Onondaga and Mohawk tellings one looks back and becomes a falling star [225, 226].

So this region says seven and delivers six, and knows it, and the subtraction is the point of the story.

Grades. That seven is the count and that one is lost in the telling: established.

Breath 5. Story

The Cherokee account, from Swimmer to Mooney

The best-known printed version comes from James Mooney's *Myths of the Cherokee*, published in 1900 in the Nineteenth Annual Report of the Bureau of American Ethnology [228], and told to him by Swimmer, a Cherokee traditionalist, storyteller and doctor, in 1887 [229].

Seven boys spend all their time at the townhouse playing the gatayusti game, rolling a stone wheel along the ground and sliding a curved stick after it to strike it [230, 231]. They neglect their work, and particularly the cornfield. Their mothers scold them and it does no good.

So the mothers do something precise and terrible. They collect the gatayusti stones and boil them in the pot with the corn, and when the boys come home hungry they dip out the stones and tell them that since they like the gatayusti better than the cornfield, they may take the stones for their dinner [231].

The boys go to the townhouse and say that as their mothers treat them this way, they will go where they will never trouble them any more [232, 233]. They begin a dance, and some versions identify it as the **Feather dance** [233, 228]. They go round and round the townhouse, praying to the spirits to help them.

The mothers come and see the boys still dancing, and see that their feet are off the earth, and that with every round they rise higher [234, 233]. The mothers run to get their children and it is too late; they are already above the roof of the townhouse.

Six go up. One mother reaches her son with a gatayusti pole and pulls him down, and he strikes the ground so hard that he sinks into the earth, and a pine tree grows from the spot.

Mooney connects the Feather dance with the Eagle dance, and records a variant from Stansbury Hagar in which the boys spend their time shooting at cornstalks, and in which **the drum becomes the nebula near one of the stars** [228].

The Haudenosaunee account

Beauchamp published an Onondaga version in the *Journal of American Folklore* in 1900 [225]. The boys ask their parents for food and are refused. While the adults work, the boys amuse themselves by dancing [225]. They dance, and their hearts become light, and they forget their troubles, and the song goes faster, and they feel themselves dancing into the sky [226].

Their parents see them above the treetops and call them to return. One little dancer looks back, and he becomes a falling star [226, 225]. The rest become Oot-kwa-tah.

Ray Fadden, Tehanetorens, places the Mohawk version at Lake Ontario, with seven children who formed a secret society among themselves [226].

The three things this story does that no other in the study does

First, the grievance is food. In Cherokee the mothers serve stones instead of corn. In Onondaga the parents refuse food outright. The cluster exists because children were not fed.

Second, they rise by their own act. No god transforms them. No hero executes them. No pursuer drives them up. They dance themselves into the sky, deliberately, having decided to go. Of every tradition in this study this is the only one where the cluster chose.

Third, the loss is caused by looking back. The one who does not make it is the one who hears his father's voice and turns. In Cherokee he is pulled by a mother's pole and becomes a tree. In Onondaga he looks down and becomes a falling star.

Grades. That the Cherokee story is as given: established on Mooney 1900 from Swimmer 1887. That some versions name the dance as the Feather dance and Mooney links it to the Eagle dance: established on Mooney. That Hagar's variant has the drum become the nebula: established as Mooney's report of Hagar. That the Onondaga version is as given: established on Beauchamp 1900.

Breath 6. Missing

This is the most vivid treatment of the missing member anywhere in the study, and it is the only one that makes the loss a **moral event in the present tense**.

Greece: she dimmed from shame, long ago, in one of three ways. India: she was never lost; she is over there, and we point at her. The steppe: she was stolen by the seven men, and you can see her among them. Australia, where it appears: she was taken and sometimes recovered.

The woodlands: he looked back, and that is why he is not there.

And the two outcomes are different in a way that matters.

The Cherokee seventh becomes a pine tree. He is pulled back to earth, strikes it, sinks in, and a pine grows at the place. So the story explains a feature of the forest as well as a feature of the sky. The missing star is standing in the woods.

The Onondaga seventh becomes a falling star. He is the thing you see when something comes down out of the sky. So the story explains a recurring observation: meteors are children who turned round.

Neither of these is shame. Neither is abduction. Both are about a child who could not leave his parents, and in the Cherokee case the grieving mother is in the story.

What this does to the count

The second gather counted seven mechanisms across five traditions for the missing member. This pass splits one of those into two, because the Cherokee pine and the Onondaga falling star are different mechanisms with different physical referents.

Eight mechanisms now, across six traditions. Shame, mourning for Troy, a god's embrace withheld, abduction by the seven, abduction and recovery, an unimitatable wife in another constellation, a pine tree, a falling star.

Eight answers to one arithmetic problem is the signature of a shared problem, not a shared memory. That is now the single most robust finding in the study after the calendar.

Grades. That the Cherokee seventh becomes a pine and the Onondaga seventh a falling star: established. That these are independent solutions: supported.

Breath 7. Pursuit

There is none, and the absence is clean.

No Orion figure. No hunter. No sorcerer. No god. The parents come after the children, but they come to bring them home, not to take them.

Which is a direct test of Berezkin's statement that in North America Ursa Major and the Pleiades are never mentioned together, and of the broader claim that the pursuit motif is near-universal. In the eastern woodlands the Pleiades story needs no second constellation at all. It is complete in itself.

One caution on a source. A popular account of the Midwinter Ceremony says the timing is taken from the dipper constellation standing directly overhead [235]. The scholarly and community sources all give the Pleiades [227, 236, 225, 226]. The dipper statement appears to be an error, and it is noted here rather than used, because it is exactly the kind of slip that creates a false Bear-and-Pleiades association in the record.

Grades. That the eastern woodlands Pleiades story contains no pursuer: established. That one popular source misattributes the Midwinter timing to the Big Dipper: established as an error in that source.

Breath 8. Year

The Pleiades set the Haudenosaunee New Year, and the mechanism is documented

The Midwinter Ceremony, or Most Excellent Faith, is the most sacred celebration of the Iroquois ritual calendar, and it occurs at the end of January or the first part of February, **depending on the appearance of the Pleiades and the first new moon after the winter solstice** [236].

The reckoning, stated three ways by three sources:

- Five days after the first new moon following the zenith of the Pleiades [227].
- When the dancing boys are directly overhead at sunset, with the appearance of the new moon, after the last hunt of the season [225].
- When they dance directly overhead, it is time for the New Year Feast, in the Moon of the New Year, January or February [226].

So the system is a **conjunction rule**: the cluster must reach the zenith, and then the next new moon is found, and then five days are counted.

That is the same kind of rule as the Babylonian intercalation scheme, which turned on the conjunction of the moon and the Pleiades, and as the Tamil festival date, which requires the full moon with the moon in Krittika. **Three unconnected traditions built a lunisolar rule on this cluster.**

The ceremony lasts nine days and includes the Stirring of the Ashes, the Big Heads, the Tobacco Invocation, the Great Feather Dance, the Peach Stone Game, dream-sharing, the False Face Society and the White Dog Sacrifice [237, 238].

And the reform, which is the rarest kind of evidence

The teachings of Handsome Lake say that the ceremony should start five days after the first new moon **of January**, rather than five days after the first new moon following the zenith of the Pleiades [227].

Handsome Lake was the Seneca prophet whose revelations from 1799 reshaped Haudenosaunee religious practice. So here, in writing, with a name and a date attached, is **a Pleiades calendar rule being replaced by a civil-calendar rule.**

Deep Pass Three found a Pleiades calendar dying slowly by precession in India. This one did not die of astronomy. It was reformed, by a named prophet, two centuries ago, in response to a colonised world in which January existed.

Two rungs, two mechanisms of decay: the sky moved in one case, and the calendar changed in the other.

Grades. That the Midwinter Ceremony is timed by the Pleiades and the new moon: established, on the Tuscarora account, the community sources and Tehanetorens. That the zenith is the trigger: established. That Handsome Lake's teaching substitutes the January new moon: established as reported.

Breath 9. Rite

The story and the ceremony are the same dance

This is the finding of this pass, and nothing in the first four rungs prepared me for it.

The boys rose into the sky by dancing the Feather dance [233, 228].

The Great Feather Dance is one of the central observances of the Midwinter Ceremony [237, 238].

And the Midwinter Ceremony is dated by the arrival of those same boys at the zenith [227, 236].

So the loop closes. The children danced the Feather dance and became the cluster. When the cluster stands overhead, the people hold the New Year, and they dance the Great Feather Dance. The dance that made the stars is performed when the stars say to perform it.

No other tradition in this study has that. Greece has a story and no rite. India has a story and two rites, but the rites are not the story. Australia performs the songline, which is close, but the songline is a journey rather than a single act that both caused and commemorates the sky.

And the food completes it. In the story the children are refused food and fed stones. The ceremony they set the date for is a nine-day midwinter thanksgiving held after the last hunt of the season, with the Stirring of the Ashes as thanks for the blessings of the previous year [237, 225].

Children refused food dance into the sky; the sky tells the people when to give thanks for food. The grievance and the gratitude are the same ceremony.

Grades. That the Feather dance is named in some Cherokee versions as the dance by which the boys rose: established on Mooney. That the Great Feather Dance is part of the Midwinter Ceremony: established. That the two are the same dance: **supported**, and it should be checked with a Haudenosaunee or Cherokee knowledge keeper before the study prints it, since the Cherokee and Haudenosaunee are different peoples and the link crosses them.

Breath 10. Land

Three anchors, and one of them is alive and growing.

The townhouse. The Cherokee story happens at the town-house and the boys dance round it. The council house is the centre of the settlement and of its ceremony, and the cluster came from a circle danced around it.

The pine tree. The seventh boy sank into the ground and a pine grew where he struck. This is the only case in the whole study where the missing Pleiad is **a living thing on the earth that can be stood beside.** Greece names mountains after the sisters. Australia's sisters cut the waterholes. India points at another star. The Cherokee point at a tree.

Lake Ontario. Tehanetorens places the Mohawk telling with the people camped at Keniatiio, Lake Ontario [226].

Grade: established.

Breath 11. Word

Carried by **oral telling into ethnographic print, and then back into living oral telling**, which is a path no other rung has.

The chain is traceable. Swimmer told it to Mooney in 1887; Mooney printed it in 1900 [229, 228]. Beauchamp printed an Onondaga version in the *Journal of American Folklore* in the same year [225]. Hagar recorded his variant separately [228]. Tehanetorens, Ray Fadden, a Mohawk educator, published the Mohawk telling for his own community [226]. And Perry Ground, Turtle Clan of the Onondaga Nation, told the story of the seven dancing brothers on a radio programme in December 2025, saying that they tell that story to this day, of the constellation many people call the Pleiades, which they see after the winter solstice.

So the transmission is: Indigenous teller, to settler ethnographer, to print, to Indigenous educator, to broadcast, to now. It passed through the colonial record and came out still being told, by named people from named clans.

That is a different relationship with the ethnographic archive from the Tasmanian one, and from the Australian one, and it should be said plainly: here the record helped.

Grade: established.

Breath 12. Wound

The wound is removal, and this region carries two of the largest in North America.

The Cherokee were forced west on the Trail of Tears in 1838 and 1839. Mooney collected among the Eastern Band in the 1880s, that is among the people who remained after the removal, and his informant Swimmer was a traditionalist in a community that had survived it. The Haudenosaunee lost most of their territory after the American Revolution, were divided across the Canadian and United States border, and their children were taken into residential and boarding schools.

And the calendar reform belongs in this breath as well as in Breath 8. The substitution of the January new moon for the Pleiades zenith is not a neutral astronomical adjustment. It is a star-reckoned year giving way to a paper-reckoned one, inside a colonised society, and the sources record both rules side by side.

But the story survived both, and it is being told by Onondaga and Mohawk and Cherokee people now. Of the six rungs so far this is the one where the gap between the scale of the wound and the survival of the tradition is widest.

Grades. That removal and boarding schools are the historical wound: established. That the Handsome Lake reform replaces a star rule with a calendar rule: established as reported. That the tradition is actively told today by named clan members: established.

Breath 13. Return

What does this region say the cluster is for?

The Onondaga name answers it. **Oot-kwa-tah, there they dwell in peace** [225].

They are children who were not fed, who were scolded, who decided to go where they would trouble nobody, who danced until their hearts were light and they forgot their troubles [226], and who got out. And the name says they are all right now.

And then the practical answer: when they come to the top of the sky, find the next new moon, count five days, and hold the New Year. Stir the ashes. Give thanks for the year. Dance the Feather dance.

Grade: established as the sources give it.

WHAT WAS SEEN

Seven boys who would not weed the corn, fed stones by their mothers, dancing round the townhouse until their feet left the ground. Six went up and are the cluster. One looked back and is a pine tree, or a falling star. And when they stand overhead at midwinter, the people find the next new moon, count five days, and begin the year.

WHAT WAS UNSEEN

That the story and the ceremony are the same dance.

The boys rose by dancing the Feather dance. The Great Feather Dance is performed at the Midwinter Ceremony. The Midwinter Ceremony is dated by those boys reaching the zenith. The sky tells the people when to do the dance that put it there.

And that the grievance and the gratitude are the same event. Children refused food danced into the sky, and the festival they now schedule is a nine-day thanksgiving for food held after the last hunt of the year.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude of the woodlands	about 35° to 46° N	the cluster passes near the zenith in midwinter
Declination of the Pleiades	about +24°	it culminates overhead at latitudes near 24° N and high in the sky across the woodlands
The marker used	the **zenith at evening**, not the heliacal rising	unique in this study
The rule	cluster at zenith, then first new moon, then five days [227]	a lunisolar conjunction rule
Comparable rules	Babylonian moon-and-Pleiades intercalation; Tamil full moon in Krittika	three unconnected lunisolar rules on one cluster
The nebula	the cluster's reflection nebulosity	identified in Hagar's Cherokee variant as the drum [228]
Alcor and the Bear	not used here	consistent with Berezkin on North America

Two geometric points

The zenith is a better marker at mid-northern latitudes than the heliacal rising, and the woodlands found that. A culmination overhead at a known hour is easier to judge than a first glimpse in the dawn twilight, and it does not depend on the clarity of the eastern horizon, which in forested hill country is often obstructed. A people in the Appalachians or around the Finger Lakes has a poor eastern horizon and an excellent view straight up.

That is the first time in this study that the local topography, rather than the latitude alone, explains which sky event a people chose. Greece had the sea horizon and used the dawn

rising. The Andes have a high clear horizon and use brightness at the rising. The woodlands have trees and hills, and looked up.

And the drum is the nebula. The cluster sits inside a faint reflection nebulosity, visible to a good eye under a dark sky as a haze around the stars. Hagar's Cherokee variant has the boys dancing to an ancient drum, and the drum becoming the nebula near one of the stars [228].

That is a tradition accounting for a feature of the cluster that most people never notice and that no other tradition in this study mentions. It is also, like Alcor, a genuine test of eyesight and sky quality.

THE LEDGER

Claim	Grade
The cluster is seven boys in Cherokee and Haudenosaunee tradition	established
Ani'tsutsă means the Boys; Unadatsugi the Group	established
Oot-kwa-tah is glossed as there they dwell in peace	established as reported
Seven is the Cherokee sacred number	established
The count follows the sacred number rather than observation	supported
The grievance is the refusal of food	established
The boys rise by their own act, with no transformer and no pursuer	established
Some versions name the dance as the Feather dance	established on Mooney
Hagar's variant makes the drum the cluster's nebula	established as Mooney's report
The Cherokee seventh becomes a pine; the Onondaga seventh a falling star	established
These are two further independent solutions to the missing member	supported
There is no pursuer in the eastern woodlands story	established
The Midwinter Ceremony is timed by the Pleiades zenith and the following new moon	established
The Great Feather Dance is part of the Midwinter Ceremony	established
The dance in the story and the dance in the ceremony are the same dance	**supported; to be checked with a knowledge keeper**
Handsome Lake's teaching substitutes the January new moon for the Pleiades zenith	established as reported
One popular source misattributes the timing to the Big Dipper	established as an error in that source
The tradition is actively told today by named clan members	established
Mooney's and Beauchamp's 1900 records are colonial-era ethnography	established

NEAR-TRUTHS

- **They chose to go.** In a study full of women fleeing, women taken, men punished and gods transforming, one region has a cluster that climbed into the sky on purpose, by dancing, because it had been badly treated.
- **The missing one is a tree.** The only place on Earth where the lost Pleiad is a living thing you can walk up to and touch.
- **The drum is the nebula.** A tradition noticing and naming the haze around the cluster, which is both a real observation and another eyesight test.
- **The zenith was the smarter choice.** People in forested hills picked the sky event their horizon allowed. The method follows the trees.
- **And the reform is as valuable as the rule.** We can see a Pleiades calendar being replaced by a civil one, with a prophet's name on the change.

THREE ILLUMINATIONS

The First: One Tradition Closed the Loop

Sky, story and ceremony are usually three things. Here they are one.

The cluster is children who danced the Feather dance into the sky. The Feather dance is danced at the New Year. The New Year is dated by the cluster arriving overhead. There is no outside to this system: the stars were made by the rite and the rite is scheduled by the stars.

Deep Pass One asked whether story and rite trade places and got the answer wrong. The right question, which this rung supplies, is **how tightly a tradition binds the three**. Greece bound none of them. India bound two. The woodlands bound all three into a closed circle.

Grade: supported, with the cross-cultural link between the Cherokee story and the Haudenosaunee ceremony flagged for a knowledge keeper.

The Second: Eight Mechanisms Now, Across Six Traditions

Shame. Mourning for Troy. A god's embrace withheld. Theft by the seven men of the Bear. Abduction and recovery. An unimitatable wife relocated to another constellation. A boy pulled down who becomes a pine. A boy who looks back and becomes a falling star.

Eight answers to the same arithmetic, in six unconnected traditions, with no two alike and several of them explaining different physical objects: a faint star, a tree, a meteor.

This is now the strongest argument in the study against inherited memory. A memory produces one answer that people hold onto. A problem produces many answers, each shaped from local material. The Pleiades produced many.

Grade: established as the count; supported as the inference.

The Third: Topography Chooses the Sky Event

Every rung so far has used the heliacal rising or, in Greece, the rising and the setting. The woodlands use the zenith, and the reason is probably the trees.

A people in the Appalachian hills or the Finger Lakes forests cannot see a clean eastern horizon at dawn. It can see straight up perfectly. So it took its signal from the top of the sky and built a conjunction rule around it.

Which adds a third layer to the explanation of why this cluster is universal. It is not only that it sits on the ecliptic and is compact. It is that **it offers several different observable events, and every people can find at least one that its own horizon permits.** The dawn rising for the Greeks and the Polynesians. The dusk setting for the Tuareg. The due-east rising for the Vedic priests. The brightness at rising for the Andeans. The zenith for the woodlands. The disappearance for the steppe.

One object, six usable events, and every landscape can reach one of them.

Grade: supported. This is the geometric reason the calendar column is full, stated more precisely than the first gather managed.

> ✦ Practice: the dance that rose Breathe in and let the hurt be real. Soft pause of two counts. Breathe out and let the heart become light without looking back. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER FIVE

Held and strengthened: - The calendar is the constant. Five for five. - The function is older than the story, where the layers can be dated. - The missing member has eight independent solutions across six traditions. Strongest anti-inheritance finding after the calendar.

New after the woodlands: - One tradition binds sky, story and ceremony into a closed loop. - The cluster can be children, and can choose to go. - Topography, not only latitude, decides which

of the cluster's several observable events a people uses. - A Pleiades calendar can be replaced by a civil one, with a named reformer and a date.

Confirmed from the previous rung: - Berezkin's statement that Ursa Major and the Pleiades are never associated in North America holds here, and the one source that says otherwise is in error.

Next rung: Mesopotamia, with Egypt beside it. Two literate calendar civilisations, two thousand years of records, seven male gods, a decan called Khau, and no sisters whatsoever. If the function is older than the story, the oldest written records on Earth should show it.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The Cherokee and Haudenosaunee are distinct peoples and the link drawn in Breath 9 between a Cherokee story element and a Haudenosaunee ceremony crosses between them; it is graded supported and flagged, not asserted. The principal sources are Mooney 1900 and Beauchamp 1900, which are colonial-era ethnography, set beside published tellings by Tehanetorens and Perry Ground. Nothing restricted was sought. The author reads everything and decides what goes on the page.

Mesopotamia and Egypt · The Bristle on the Bull, and the Seven Gods

Why Mesopotamia is the sixth rung

Five rungs are up and the ladder has produced one durable finding and one durable correction.

The finding: in every tradition where the layers can be dated, the observational use of this cluster is older than the story about it. Greece's name means the sailing stars. India's primacy of Krittika comes from an equinoctial alignment. The Turkic name is a battle formation.

The correction: the number seven belongs to Ursa Major across the Eurasian belt, and the missing seventh has now been solved eight different ways by six unconnected traditions.

Mesopotamia is the sixth rung because it is the hardest possible test of the finding. **This is the oldest continuous written astronomy on Earth.** Two thousand years of tablets. If the function came first, the oldest records should show function and nothing but. If a seven-sisters memory was ever carried out of Africa, this is where it should surface, in a literate culture obsessed with sevens, writing about this exact cluster for twenty centuries.

What it shows instead is seven armed men, a temple in three cities, and a bristle on a bull. And it shows one thing that forces a rewrite of a rung still ahead.

Egypt is set beside it here rather than given its own rung, because the second gather established that Egypt's relation to this cluster is a decan in a clock and nothing more.

THE THIRTEEN BREATHS

Breath 1. Sky

Mesopotamia lies between about 30 and 37 degrees north, Egypt between 22 and 31. Both are at the latitude where this cluster is a clean dawn-rising and dusk-setting object, with a flat desert or river horizon and famously transparent air.

And Mesopotamia is the place where the cluster's position on the ecliptic was first turned into a system. The ecliptic, in the Babylonian conception, **begins precisely with the Pleiades** [240].

In the Path of the Moon, the eighteen-station pre-zodiac given in MUL.APIN, MUL.MUL is station number one, with Anu as its god, and the Bull of Heaven is station two [241].

Grade: established.

Breath 2. Name

Two names, and both of them turn up again elsewhere

MUL.MUL, written with the star sign doubled, □□. It is glossed as the Stars, the Star of Stars, Many Stars, or the Star Cluster [242, 241, 243].

Zappu, the Akkadian name, meaning **the Bristle** [244, 245, 243].

And the Bristle is not abstract. It refers to the mane, or the hair, of the Bull of Heaven, *mulGU4.AN.NA*, the constellation we call Taurus, to which the cluster belongs [245, 240].

Which makes two independent findings at once

First, MUL.MUL is a Gathered Together name, and it is the oldest one. The second gather assembled nine traditions that named this cluster for nothing but its clustering, and the fourth rung added Ülker to make ten. MUL.MUL, simply the Stars, written in Sumerian, is the earliest attested member of that family anywhere.

Second, and this is new: zappu and Mao are the same idea.

Mesopotamia called the cluster the Bristle, the hair on the mane of the Bull of Heaven. China called it **Mao, the Hairy Head of the White Tiger of the West**, the maned head of the western quadrant's great beast.

Two of the three oldest literate astronomies on Earth, with no contact between them, looked at this cluster and saw **hair on a large animal whose body is the surrounding constellation.** Both placed it on the head or shoulder. Both made the cluster a texture rather than a group of beings.

This is a convergence the first gather listed as two separate oddities and never put side by side. It is now one finding, and the reason is probably in the geometry: a compact haze of small points at the shoulder of a large bright figure reads as fur.

Grades. That MUL.MUL means the Stars or Star Cluster: established. That zappu means the Bristle and refers to the Bull's mane or hair: established. That zappu and Mao are an independent convergence on animal hair: supported, and this study's own inference from two established names.

Breath 3. Form

Seven armed men. And the iconography is specific.

The cluster is identified with the Sebettu, written dIMIN.BI, read *ilū sibitti*, the Seven Gods, described as seven astral deities [246, 247]. The All Skies Encyclopaedia records that Mesopotamian sources, including Astrolabe B and MUL.APIN, describe them as **male**, and marks this explicitly as the difference from the Greek and Vedic material [246].

The Neo-Assyrian images are unambiguous: bearded warriors in long robes and cylindrical hats, each holding a battle axe in his raised right hand and a dagger in his left, with a bow and quiver [247]. They appear in royal palace reliefs [248]. They carry axe and knife together with bow and quiver, and the same attributes appear on their protective figurines in domestic settings [248].

And the form is unstable in a particular way

The Sebettu are both gods and demons, and the texts move between the two.

As gods, they are identified in the first instance with the seven major deities of the pantheon: the three great gods An, Enlil and Enki or Ea, plus the three astral gods, moon, sun and Venus [249]. MUL.APIN states the equation directly at I i 44: the Stars, that is the Pleiades, the seven great gods [240].

As demons, they are the Seven of the incantation literature, and a philological point marks the difference: the demons are seldom preceded by the divine determinative, so they are not properly gods [249]. They are fierce and formidable [250]. In the myth of Erra the Seven are cruel warriors who exterminate people and animals [246], and Erra, whose name means scorched earth, is accompanied by Ishum, fire, and by disease-causing demons called Sibitti [248].

And then they turn protective. Although fierce demons, the sibittu appear increasingly in protective roles, especially from the second half of the second millennium BC [250]. Their power could be marshalled beneficently against demons by means of magical incantations and depiction [248]. They become overwhelmingly apotropaic [251].

So the Pleiades in Mesopotamia are seven armed men who begin as a plague and end as a household guard.

Grades. That the cluster is identified with the Sebettu as seven male deities: established. That the iconography is bearded warriors with axe, dagger, bow and quiver: established. That they are identified with the seven great gods at MUL.APIN I i 44: established. That they are also the seven demons of the incantation texts and lack the divine determinative there: established. That they shift toward a protective role from the later second millennium: established.

Breath 4. Number

Seven, absolutely, for two thousand years, with no record anywhere of a missing one.

And the number does not come from counting. **The Sumerian ideogram for seven is used as an alternative name for the cluster outright** [252]. The cluster *is* the number.

Mesopotamian culture is saturated with sevens: seven winds, seven sages, seven gods of the wide heavens, seven evil gods, seven heralds, seven reed flutes, seven great daises, the snake with seven tongues, sins seven times seven [253].

This is the cleanest demonstration in the whole study that seven can attach to this cluster without any lost sister. The oldest written astronomy on Earth says seven for twenty centuries, in a culture where seven already meant a complete set, and never once says that one cannot be seen.

Grades. That the Sumerian seven-sign is used as a name for the cluster: established. That the Mesopotamian record contains no missing-member tradition: established as an absence across a very large corpus.

Breath 5. Story

There is barely a story, and that is the finding.

What there is: the Seven are born, they serve, they destroy, and they protect. In the *Erra* epic they are the god's seven cruel companions. In the incantations they are the Seven who come. Their mother is named in one tradition as the goddess whose astrological embodiment is Scorpio, called the mother of the Seven [248].

There is no narrative of pursuit, no missing member, no transformation, no abduction, no exile, no dance.

The oldest and most voluminous written tradition about this cluster on Earth has no plot. It has a function, an identity, an iconography and a cult. Mesopotamia wrote about these stars for longer than anyone and never told a story about them.

Grades. That the Mesopotamian material is cultic, calendrical and magical rather than narrative: established. That the Seven appear as Erra's companions: established.

Breath 6. Missing

Nothing. In two thousand years of tablets, nothing.

This breath is empty and the emptiness is one of the three most important facts in the study.

The hundred-thousand-year proposal rests on the premise that the seven-that-is-six anomaly is so widespread that it must be inherited. Mesopotamia says seven, from the third millennium to the Seleucid period, in star catalogues, almanacs, omen texts, incantations, royal inscriptions and on boundary stones, and never registers a problem.

If the anomaly were an inherited wound, the one literate culture most devoted to sevens and to this cluster in particular should have worried at it. It did not. **It had seven because seven was the number, and it never looked up and counted six.**

Grade: established as an absence, on a corpus large enough for the absence to mean something.

Breath 7. Pursuit

None, and the relation to the surrounding sky is of a completely different kind.

The cluster is not pursued by anything and does not pursue anything. **It is part of the Bull.** Zappu is the Bull's bristle; the Bull of Heaven is the next station along the Path of the Moon [241]; the Hyades are the Jaw of the Bull [243].

So where Greece and Australia made the cluster a group of beings fleeing another group of beings, Mesopotamia made it **a body part of a larger animal**. There is no drama because there are no separate actors.

Orion is in the Mesopotamian sky as the True Shepherd of Anu, and he has nothing to do with the Pleiades.

Grades. That the cluster is the Bull's bristle and part of the Taurus complex: established. That there is no pursuit motif: established.

Breath 8. Year

The Pleiades run the Babylonian leap year

This is the most technically sophisticated calendrical use of the cluster anywhere in the study, and it is a genuine algorithm.

The cuneiform texts of MUL.APIN, produced from the seventh century BC onwards, describe Pleiades leap rules for the intercalation of months [254]. There are six intercalation rules in the lines of Gap A on the second tablet; three deal with the Moon, two of them observational and one computational, and the others are based on observations of two bright stars and one star cluster in twilight [255]. The section at II Gap A 10 to 11 is the heliacal rise of the Pleiades [255].

The two surviving Pleiades leap rules are at lines eight to eleven of the second tablet, and the beginnings of lines ten and eleven, though damaged, can be reconstructed reliably [254]. The rule reads: when on the first of Nisannu the Pleiades and the moon are in balance, this year is normal [254, 245].

The system is known as the **Plejaden-Schaltregel**, the Pleiades leap rule, first discussed by Schaumberger in 1935 [245]. The scheme turns on the conjunction of the moon and the Pleiades [240, 256]: the next conjunction of the moon and the Pleiades will fall on the first of Nisannu again in a normal year, and a deviation signals that a thirteenth month must be inserted [256, 254].

Astrolabe B names the Bristle in the month of Ayaru [240].

Egypt, for comparison, and it is thinner

Egypt divided the year into thirty-six decans, each heading a ten-day week, painted on coffin lids and tomb ceilings. Most researchers think the decan **Khau** denotes the Pleiades, and the identification is supported by planetarium reconstruction. But only Sirius, Orion and the Plough command widespread consensus among Egyptologists for their star identifications.

So Egypt used the cluster as one clock hand among thirty-six, probably, and said nothing else about it. The second gather graded the Neith and Hathor claims not supported, and this pass has nothing to add.

The pattern across three rungs

Tradition	What it built on the cluster
Babylon	a lunisolar intercalation algorithm, by moon-Pleiades conjunction
South Asia	the nakshatra system, headed by Krittika, with the fire lit at its eastern rising
The woodlands	the New Year rule: zenith, then first new moon, then five days

Three unconnected traditions built a lunisolar conjunction rule on this one cluster. And two of them, Babylon and India, made it the **first station** of their lunar-station system.

Grades. That MUL.APIN contains Pleiades intercalation rules: established. That the rule turns on the moon-Pleiades conjunction at Nisannu: established. That the cluster is station one of the Path of the Moon: established. That three traditions independently built lunisolar conjunction rules on it: established as a distribution; whether Babylon and India are independent on this point is **open** and matters.

Breath 9. Rite

Mesopotamia has temples, and nowhere else in the study does

There were temples dedicated to the Sebettu at the Assyrian cities of Kalhu, that is Nimrud, Dur-Sharrukin, that is Khorsabad, and Nineveh [257].

Read that against the rest of the ladder. Greece: no attested rite. India: a lamp festival on a hill and a wedding rite, but no temple to the cluster itself. Australia: ceremony, songline, a rite of casting

coals. The woodlands: a nine-day New Year dated by the cluster. **Mesopotamia built the cluster its own houses, in three royal cities.**

And the cult has a history. A developing cult to the Sebettu first surfaces in Kassite-period Babylonia, is referenced on kudurru of the late Middle Assyrian period, and is taken up by the Neo-Assyrian kings for political purposes [251].

The domestic side is as well attested as the royal. Their power could be harnessed against evil by means of magical incantation [257]; they protect places and people against evil [250]; and protective figurines of the Seven, carrying the axe, knife, bow and quiver, were used on a domestic level [248].

So the Pleiades in Mesopotamia had state temples, royal reliefs, legal iconography and household amulets. It is by a wide margin the most institutionally embedded Pleiades tradition this study has found.

Grades. That temples to the Sebettu existed at Kalhu, Dur-Sharrukin and Nineveh: established as reported. That the cult emerges in Kassite Babylonia and is developed by the Neo-Assyrian kings: established. That apotropaic figurines of the Seven were used domestically: established.

Breath 10. Land

Three named cities with temples: **Kalhu (Nimrud), Dur-Sharrukin (Khorsabad), Nineveh** [257]. All three are Assyrian royal capitals, which tells us the cult was a state cult.

And the anchoring is not only architectural. It is **legal**. On kudurru, the boundary stones that recorded land grants, and on seals of the Neo-Assyrian period, the symbol of the Pleiades appears as seven dots or stars, usually in the same row as the symbols of Sin, Shamash and Ishtar [246, 247]. The seven dots appear on cylinder seals, clay tablets, stelae and boundary stones, at the top of the field, next to the gods' iconography [250].

The Pleiades is one of the standard divine symbols guaranteeing a property deed, ranked alongside the moon, the sun and Venus.

No other tradition in this study puts the cluster into its legal instruments.

Grade: established.

Breath 11. Word

Cuneiform, and a glyph, and the glyph is the problem

The textual transmission is the best in the world: star catalogues, almanacs, the Three Stars Each lists, MUL.APIN itself with its latest copies dated to around 300 BCE [258], omen literature, incantations and royal inscriptions, all on clay, much of it excavated.

But the second carrier is the one that matters for this study. **The cluster has a written symbol: seven dots.**

And here is the finding that forces a rewrite of a rung still ahead.

The seven-dots glyph is first known in Mitanni art and is possibly older, appearing on cylinder seals and later on reliefs [259]. And its form has a history: **the seven-dot glyph was at first six dots surrounding a central dot, and only later became two rows of three with a seventh as the finial** [259].

Six dots around a central seventh.

Which is the Nebra disc

The Nebra sky disc, dated to roughly 1800 to 1600 BCE, carries a group of seven gold dots widely read as the Pleiades. Norris and Norris themselves observe that the representation consists of six stars arranged symmetrically around a seventh, and that it is therefore probably symbolic rather than a literal picture of the cluster.

They were right that it is symbolic. This pass can say what symbol it is. **Six around a centre is the standard Near Eastern convention for the seven-dots glyph of the Pleiades**, in the right centuries, in a region in contact with central Europe through the Carpathian metal trade.

So the Nebra disc is probably not an independent Bronze Age European observation of seven Pleiades. It is probably the Near Eastern glyph, or the same convention, reaching the Unstrut valley. Which removes the oldest unambiguous European depiction of the Pleiades as seven from the evidence for an ancient native European count.

The Bronze Age Europe rung has to be rewritten around this, and the ledger records it now.

Grades. That the seven-dots glyph denotes the Pleiades on kudurru and seals: established. That its earlier form was six dots around a central one: established as reported. That the Nebra disc's

arrangement matches that convention: **supported**, and this study's own inference. That the Nebra disc therefore reflects Near Eastern convention rather than independent observation: **contested**, and it needs a Bronze Age specialist before the study prints it.

Breath 12. Wound

Total destruction of the practice, total survival of the record. The reverse of every other rung.

The temples at Kalhu, Dur-Sharrukin and Nineveh were destroyed. The cult ended. Cuneiform died. Nobody has made an offering to the Sebettu for two thousand years, and no living community carries this tradition.

And yet we know more about the Mesopotamian Pleiades than about the Greek, because it was written on clay and clay survives burning. The cult is gone and the tablets are legible.

Compare Tasmania exactly. There, a living people's star knowledge vanished because the record was never made. Here, a dead religion's star knowledge is fully recoverable because the record was fired.

Two opposite kinds of loss, and the study needs both to read any silence correctly. An absence in the Mesopotamian record is meaningful, because the record is vast. An absence in the Tasmanian record is meaningless, because the record is a fragment. That distinction is what licenses the strong claim in Breath 6 and forbids the strong claim about Tasmania.

Grades. That the Sebettu cult is extinct: established. That the textual record is nonetheless the fullest in the world for this cluster: established.

Breath 13. Return

What did Mesopotamia say the cluster is for?

For telling whether the year is right. When on the first of Nisannu the Pleiades and the moon are in balance, this year is normal [254]. If they are not in balance, a thirteenth month goes in and the year is corrected.

And for standing guard. Seven armed men with axes and bows, in the temple at Nineveh and in a figurine buried under a doorway, keeping what is outside outside.

A leap rule and a guard. Mesopotamia's cluster is for keeping the calendar true and the house safe.

Grade: established as a reading of the texts and the material record.

WHAT WAS SEEN

Seven bearded gods with battle axes, who began as a plague and became a household protection, with temples in three Assyrian capitals and their seven dots on boundary stones beside the moon, the sun and Venus. And a leap rule: if the moon and the cluster are in balance on the first of Nisannu, the year is sound.

WHAT WAS UNSEEN

That the oldest and largest body of writing about this cluster on Earth contains no story and no missing star.

Two thousand years of tablets. Seven, every time, in a culture where seven was already the number of a complete set and the seven-sign was itself a name for the cluster. Nobody in Mesopotamia ever went outside, counted six, and wrote down a reason.

And that the Nebra disc's six-around-a-seventh is a Near Eastern glyph convention, not a Bronze Age European observation.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude of Babylonia	about 30° to 33° N	clean dawn horizon, transparent air
Position of MUL.MUL in the Path of the Moon	station **one** of eighteen [241]	the ecliptic begins with the Pleiades [240]
India's nakshatra list	**Krittika first**	the same choice, independently or not
The intercalation trigger	moon and Pleiades in balance on Nisannu 1 [254]	a lunisolar conjunction algorithm
Second rule	from Arahsamnu 15, the moon's position relative to the cluster [256]	a second check six months later
The cluster's ecliptic distance	within about 4°	the reason the moon can be in balance with it at all
Lunar month vs solar year	354 against 365 days	a thirteenth month must sometimes be inserted
Zappu's place	the Bull's mane or hair [245]	a texture on a large animal

The geometric point of this pass

The four-degree ecliptic offset is what makes the leap rule possible, and only Mesopotamia exploited it fully.

The moon's path carries it past this cluster every month, and it occults the cluster regularly. That is a consequence of the cluster lying within four degrees of the ecliptic, which the first gather identified as the physical reason the cluster is a universal calendar marker.

Babylon took that one step further than anyone. It did not merely use the cluster's annual appearance. It used **the monthly meeting of the moon and the cluster as a check on the drift between the lunar and solar years**, and built an intercalation rule out of the mismatch.

A people needing a leap rule needs a bright fixed marker close enough to the moon's path for a conjunction to be judged by eye. There are very few candidates. **The Pleiades is the best one in the sky**, and two literate traditions put it first in their lunar-station lists for exactly that reason.

THE LEDGER

Claim	Grade
MUL.MUL means the Stars or Star Cluster	established
Zappu means the Bristle and refers to the Bull's mane	established
Zappu and Chinese Mao are an independent convergence on animal hair	supported
The cluster is identified with the Sebettu as seven male deities	established
The iconography is bearded warriors with axe, dagger, bow and quiver	established
MUL.APIN I i 44 equates them with the seven great gods	established
They are also the seven demons, without the divine determinative	established
They shift toward a protective role from the later second millennium	established
The Sumerian seven-sign is itself a name for the cluster	established
The Mesopotamian record contains **no** missing-member tradition	established as a meaningful absence
The material is cultic, calendrical and magical rather than narrative	established
There is no pursuit motif; the cluster is part of the Bull	established
MUL.APIN contains Pleiades intercalation rules	established
The rule turns on the moon-Pleiades conjunction at Nisannu	established
MUL.MUL is station one of the Path of the Moon	established
Babylon and India independently put the cluster first in their lunar-station lists	**open**, and it matters
Temples to the Sebettu existed at Kalhu, Dur-Sharrukin and Nineveh	established as reported
Apotropaic figurines of the Seven were used domestically	established
The seven-dots glyph denotes the Pleiades on kudurru and seals	established
Its earlier form was six dots around a central one	established as reported

Claim	Grade
The Nebra disc's arrangement is that convention, not an observation	**contested; needs a Bronze Age specialist**
Egypt's decan Khau is the Pleiades	supported
Egyptian star identifications generally command consensus	not supported; only three do

NEAR-TRUTHS

- **The Bristle and the Hairy Head.** Two unconnected literate astronomies both saw this cluster as hair on a great animal at the same place in the sky. That is a convergence the first gather had as two separate curiosities.
- **The seven-sign is the name.** The clearest possible demonstration that seven can attach to the cluster from a number system rather than from counting stars.
- **The emptiest breath is the loudest.** Two thousand years of records with no missing star is worth more to this study than any single story.
- **Temples.** The only ones. Three Assyrian cities built houses for this cluster.
- **And the deed stones.** Seven dots beside the moon, the sun and Venus, on documents that transferred land. The cluster was a legal guarantor.

THREE ILLUMINATIONS

The First: The Oldest Record Has the Function and Not the Story

If the ladder's central finding is right, the oldest written tradition should show use without narrative. It does, more starkly than anywhere.

Mesopotamia wrote about this cluster for twenty centuries and produced: a station in the lunar path, an intercalation algorithm, an omen series, a divine heptad, a cult, an iconography, and a legal symbol. **It produced no plot.** No sisters, no chase, no lost one, no transformation.

Function, cult and sign, fully developed, with the narrative slot empty.

Grade: established. This is the strongest form the finding has taken, because it rests on an enormous corpus rather than on a layered inference.

The Second: The Absence of the Missing Star, in the Place It Should Be Loudest

Two thousand years. A culture of sevens. The seven-sign used as the cluster's own name. Boundary stones, temples, incantations, almanacs. And no one, anywhere, records that one of the seven cannot be seen.

The hundred-thousand-year proposal needs the six-versus-seven anomaly to be old and widely felt. **Here is the oldest place it could have been felt, and it was not felt.**

Which supports the explanation the fourth rung offered: the seven is a number brought to the cluster, not read off it. Mesopotamia brought it from its own arithmetic of completeness. English brought it from Greece. Neither counted.

Grade: established as the absence; supported as the inference.

The Third: The Nebra Disc Falls

The oldest unambiguous European depiction of the Pleiades as seven shows six dots around a seventh. The Mesopotamian seven-dots glyph, which denotes the Pleiades, was at first six dots around a central dot [259].

Same arrangement, same millennium, and a trade route between them.

If this holds, the Nebra disc stops being evidence that Bronze Age Europeans counted seven stars in this cluster, and becomes evidence that a Near Eastern convention reached central Germany. The critic of the hundred-thousand-year proposal used the disc to show how recent all the evidence is. **This pass suggests it may not be evidence of a count at all.**

Grade: contested, and flagged as the single most checkable new claim this study has produced. A Bronze Age specialist and an Assyriologist could settle it between them in an afternoon.

> ✦ Practice: in balance Breathe in and let the moon come up beside the cluster. Soft pause of two counts. Breathe out and ask whether the year is sound, or needs another month. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER SIX

Held and strengthened: - The calendar is the constant. Six for six, and here it is an algorithm. - The function is older than the story. **Now at its strongest: the oldest corpus has the function and no story at all.** - The missing member has eight solutions across six traditions, and **none at all** in the oldest and largest record.

New after Mesopotamia: - Zappu and Mao: two literate astronomies independently saw hair on a great animal. - The seven-sign is itself a name for the cluster: seven comes from arithmetic, not counting. - Temples, royal reliefs, household amulets and boundary stones: the most institutionally embedded tradition in the study. - Two lunar-station systems, Babylonian and Indian, both begin with this cluster. Independence open. - **The Nebra disc's six-around-a-seventh is a Near Eastern glyph convention.** The Bronze Age Europe rung must be rewritten. - And a rule for reading silence: an absence in a vast record means something; an absence in a fragment means nothing. This is what separates Breath 6 here from Tasmania.

Next rung: China. The Hairy Head of the White Tiger, the other half of the convergence found in this pass, in the one other literate astronomy that ran continuously for millennia. Two thousand more years of records, and we will see whether it too has a function and no story.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The Assyriological material is read through the All Skies Encyclopaedia, two *Mediterranean Archaeology and Archaeometry* papers, a monograph summary and the standard reference works, not from the cuneiform. The Nebra disc claim in Breath 11 is this study's own inference from two established facts and is graded contested; it should be put to a specialist before it is printed. The author reads everything and decides what goes on the page.

China · The Hairy Head of the White Tiger

Why China is the seventh rung

Six rungs are up. The last one was the strongest: the oldest written astronomy on Earth has a leap-year algorithm, temples in three cities, seven armed gods, a boundary-stone glyph, and **no story and no missing star at all.**

China is the seventh rung because it is the only remaining test of the same kind. Here is the other literate astronomy that ran continuously for three thousand years, entirely independent of the Mediterranean, with its own records, its own mansion system and its own name for this cluster. If Mesopotamia's emptiness is a fact about writing rather than a fact about Mesopotamia, China should be empty too.

And this pass found three things worth having. One is a convergence of **observational method** across the Pacific that nothing in the ladder predicted. One is a case of **documented transmission** with a translator's name and a date on it. And one is a genuine divergence: China is the one literate mansion system that did **not** put this cluster first.

THE THIRTEEN BREATHS

Breath 1. Sky

China's historical heartland runs from about 30 to 40 degrees north, the same band as Mesopotamia and the eastern woodlands of North America.

And the observation China fixed on is the one the woodlands fixed on. From the *Book of History*, the Canon of Yao: when the day is short and the star Mao is seen, it rectifies midwinter. **That is, if Hairy Head is seen at the zenith at sunset, the winter solstice has arrived** [260].

The cluster is placed in Taurus and identified as precisely that cluster of small stars [260].

Grade: established as the text and its standard interpretation.

Breath 2. Name

Mao, and it means both things at once

昴, Mǎo, the Hairy Head. The *Records of the Grand Historian*, in the Treatise on the Celestial Offices, states that Mao is called Hair Head, and the *Shuowen Jiezi*, the Han dictionary, explains *mao* as meaning hair [260].

It is also called **Liu**, and also Banner Head [260]. And the name Mǎo is etymologically linked to Liú, **implying a clustering of stars** [261].

So the Chinese name carries two senses, and each one belongs to a family this study has already built.

The hair sense is the zappu convergence. Mesopotamia called the cluster the Bristle, the hair of the Bull of Heaven. China called it the Hairy Head of the White Tiger of the West. Deep Pass Six found that convergence from the Mesopotamian side; this is the other side, in the words of the *Shiji* and the *Shuowen*.

And the clustering sense makes the eleventh member of the Gathered Together family. Mao linked to Liu, implying a clustering of stars, joins MUL.MUL the Stars, Subaru gathered together, Tagemmunt the group, Kimah a heap, al-Thurayya a cluster, //xwhai a group of small stars, nyokoaro the Star Thing, the Belarusian Sieve, Ülker the deployment, and Greek Pleiades on the *pleios* reading.

Eleven traditions on five continents naming this cluster for nothing but its clustering. That column keeps growing and no other column does.

Grades. That Mao means Hairy Head and the *Shuowen* glosses *mao* as hair: established. That the *Shiji* calls Mao the Hair Head: established as the text. That Mao is linked to Liu with a sense of clustering: established as reported. That the hair sense converges with Mesopotamian zappu: supported.

Breath 3. Form

A patch of fur on a tiger, and a rooster.

The cluster is the Hairy Head, the maned head, of the White Tiger of the West, and it is the fourth of that quadrant's seven mansions, sitting at the centre of them [261, 262]. The White

Tiger guards the west, autumn and the element metal, and also war and punishment [263]. It is a group of stars as well as a beast: seven lunar mansions containing the whole of Orion and the Pleiades, and Sima Qian wrote down which stars are its shoulders [263].

And the mansion's animal totem is the **rooster**, 雞 [264]. The Baidu account gives the same: Hairy Head represents the sun and the chicken.

Which connects to a motif Berezkin dated

Deep Pass Four recorded Berezkin's finding that the Pleiades-as-hen-with-chicks interpretation is absent from Greek and ancient Near Eastern sources, is widespread in central and southern Europe, tropical and mostly western Africa, and Southeast Asia where the domestic chicken was first domesticated, and that it is **certainly late and could not exist before the Neolithic**, probably brought from Southeast Asia once a continent-wide communication network had formed.

China assigns this cluster the rooster. Southeast Asia is where the chicken came from. The Hebrew Targum gives Kimah as the hen with her brood. The Temne of Sierra Leone make the cluster chickens that Orion is about to shoot.

So the bird reading has a plausible source, a plausible date and a plausible route, and China sits on the near end of it. That is a second case, after the steppe, where a Pleiades motif can be given a history rather than a depth.

Grades. That Mao is the Hairy Head of the White Tiger: established. That its animal totem is the rooster: established as reported in the almanac tradition. That the bird reading is post-Neolithic and spread from Southeast Asia: contested, on Berezkin. That China's rooster is part of that spread: **open**, and this study's own suggestion.

Breath 4. Number

China says seven, and the Indian text that arrived says six

This is the sharpest piece of evidence in the whole study, because the two counts sit in the same culture's literature with a transmission event between them.

The classical Chinese count is seven. The Hairy Head consists of seven stars [260]. Baidu notes that the cluster consists of six to seven stars visible to the naked eye [261], and that early accounts refer to it in terms of seven.

And the *Xiuyao jing* says six. The *Sūtra of Lunar Mansions and Planets* was translated, or possibly compiled, by the Indian monk **Amoghavajra**, Bukong, who lived from 704 to 774 [265]. In it, mao, corresponding to the Pleiades, **comprises six stars. It is the abode of the fire god Agni, and curds are the appropriate food sacrifice to ward off disasters** [266, 265].

Read what came across with that text. Six stars, not seven. **Agni** as the presiding power. And a food offering.

Deep Pass Three established that in India the cluster is Krittika, that its canonical count is **six**, and that **Agni is its presiding deity**. Here is that entire package arriving in China in the eighth century, in a Buddhist sutra, with the translator's name and dates attached.

This is the cleanest documented transmission of a Pleiades tradition anywhere in this study. Not inferred from a motif distribution, not reconstructed from a name family. A text, a translator, a century, and a count changing from seven to six because it came from somewhere else.

Grades. That the classical Chinese count is seven: established. That the *Xiuyao jing* gives six stars with Agni as the abode and curds as the offering: established as the text. That Amoghavajra translated or compiled it in the eighth century: established. That this represents transmission of the Indian system into China: established as the scholarly view.

Breath 5. Story

Almost nothing, as in Mesopotamia.

The classical material is positional, calendrical, divinatory and administrative. Mao is a mansion, a season marker, an omen and a fate-indicator. There is no narrative of beings.

Later folklore supplies one. Baidu records that in Chinese folklore the Pleiades are considered the embodiment of the Seven Fairies of the heavenly palace. That is a late popular identification and should be graded as such, not read back into the classical sources.

So the second great literate astronomy also has a function and no plot. Two independent civilisations, five thousand years of records between them, and neither produced a story about this cluster from its own classical tradition.

Grades. That the classical Chinese material is non-narrative: established. That the Seven Fairies identification is late folklore: supported.

Breath 6. Missing

Nothing, again.

No missing star, no lost member, no account of why six are seen when seven are named. The classical sources say seven, Baidu notes that six to seven are visible to the naked eye and that those with keen eyesight can distinguish more, and nothing is made of the discrepancy.

That is now two for two among the great literate astronomies. Mesopotamia: two thousand years, no missing star. China: three thousand years, no missing star.

The hundred-thousand-year proposal requires the six-versus-seven anomaly to be old and widely felt. **The two oldest and largest written records on Earth, independent of each other, do not feel it.** The anomaly is loudest in exactly the traditions whose records are shortest and most recently collected.

Grade: established as an absence, on a corpus large enough for the absence to mean something, by the rule set out in Deep Pass Six.

Breath 7. Pursuit

None. And as in Mesopotamia, the cluster is **part of an animal** rather than an actor.

Mao is the fur on the Tiger's head. Bi, the Net, the next mansion, is the Hyades. Zi, the Beak, and Shen, the Three Stars, are Orion [267, 268]. Orion is therefore inside the same beast as the Pleiades, not opposed to it. There is no room for a chase: pursuer and pursued would be the same tiger.

This is the second time the structure has appeared. Mesopotamia made the cluster the Bull's bristle, with the Hyades as the Jaw. China made it the Tiger's mane, with Orion as part of the same body.

Two literate astronomies, two great western beasts, and in both the Pleiades is a feature of the animal rather than a group of people.

Grades. That there is no pursuit motif: established. That Orion and the Pleiades are parts of one animal in the Chinese scheme: established.

Breath 8. Year

The midwinter zenith, and the finding of this pass

The Canon of Yao rule again, because it carries the weight: when the day is short and Mao is seen, it rectifies midwinter, meaning that Hairy Head at the zenith at sunset tells you the winter solstice has come [260]. The ancients used Hairy Head to determine the seasons [260].

Now set that beside Deep Pass Five.

The Haudenosaunee New Year is reckoned from the Pleiades at the zenith in midwinter, and then the first new moon, and then five days. The Tuscarora account gives the appearance of the Pleiades and the first new moon after the winter solstice. Tehanetorens gives it as when the dancing boys are directly overhead.

Tradition	Rule	Latitude
China, Canon of Yao	Mao at the zenith at sunset means midwinter [260]	about 35° N
Haudenosaunee	cluster at the zenith at evening, then the new moon, then five days	about 43° N

Two unconnected peoples at similar mid-northern latitudes, separated by the Pacific, independently used the midwinter evening culmination of the Pleiades to fix the turn of the year.

Nothing in the ladder predicted this. The study had established that the cluster offers several observable events and that each people takes the one its horizon permits. This is the first case of **two peoples choosing the same non-obvious event for the same reason, with no possible contact.** The dawn rising is the obvious choice and most of the world made it. The evening zenith in midwinter is a sophisticated alternative, and two societies found it.

And the mansion system, which China did not head with this cluster

China's twenty-eight mansions begin with **Jiao, the Horn**, whose anchor star is Spica, and in the Chinese system Spica marks the autumnal equinox; when the sun was in the Horn mansion it signalled the beginning of the agricultural cycle [269]. Mao is mansion eighteen [267, 268].

That is a real divergence and it needs stating plainly.

Babylon put MUL.MUL first in the Path of the Moon, and the ecliptic began with the Pleiades. India put Krittika first in the earliest nakshatra lists. **China put Spica first and the Pleiades eighteenth.**

Three independent lunar-station systems. Two chose this cluster as the head; one did not. So the choice is not forced by the sky, and the Babylonian and Indian agreement becomes more interesting rather than less: either they share an origin, or they shared an epoch in which the cluster held the vernal equinox while China was anchoring on the autumnal one instead.

Dating the Chinese system

Star names relating to the twenty-eight mansions appear on oracle bones from the Wuding period, about 3,200 years ago [270, 271]. The names of the mansions were found on a lacquer chest from the tomb of Zeng Hou Yi at Suixian in Hubei, dated around 433 BC [270, 272]. The formation of the seven western mansions is traced to the mid Warring States period, the fourth century BCE [273]. The *Huainanzi* of 139 BCE gives the first complete list of all twenty-eight anchor stars with their positions [269]. One survey notes that the mansions are likely much older, possibly as old as the third millennium BC, but that evidence is lacking [272].

Grades. That the Canon of Yao gives the midwinter zenith rule for Mao: established as the text. That China and the Haudenosaunee independently used the midwinter evening culmination: supported, and this study's own comparison of two established facts. That the Chinese system begins with the Horn and Spica, not the Pleiades: established. That mansion names appear on Shang oracle bones: established. That the system is third-millennium: not supported; evidence is lacking.

Breath 9. Rite

Curds, and the carrying out of sentences

Two ritual uses, and the first one came from India.

The food offering. The *Xiuyao jing* records that curds are the appropriate food sacrifice for mao, to ward off disasters [266, 265]. The text includes practical knowledge required for carrying out rituals, such as the type of food offering for each lunar mansion [265].

So a specific prescribed offering to this cluster exists in the Chinese Buddhist literature, and it arrived with the Indian system in the eighth century.

The administrative and judicial use. In the almanac tradition the Mao mansion presides over the imperial seal, formal judgments, and **the carrying out of sentences**; it is favourable for formal judgments and cautious for marriages [264].

That belongs with the White Tiger's own character. The Tiger guards war and punishment [263], and the White Tiger Star was regarded as an inauspicious deity in ancient Chinese astrology [273]. The Mao mansion itself was considered an ominous mansion, presiding over disasters and calamities, and within the asterism system it symbolises the gathering in and closure of all things, governing the western autumn gate [261].

And the mansion carries personal fate: someone born on a day when the moon leaves mao has great renown and is revered by others [266].

The pattern across the ladder

Tradition	What is done when the cluster says so
Mesopotamia	insert a thirteenth month; temple offerings; bury a figurine
India	light the fire; light six lamps; show the bride Arundhati
Haudenosaunee	stir the ashes; dance the Feather Dance; name the children
Australia	sing the songline; cast coals at the rising
China	**fix midwinter; offer curds; seal a document; carry out a sentence**

Grades. That the *Xiuyao jing* prescribes curds as mao's offering: established as the text. That Mao governs the imperial seal, judgments and the carrying out of sentences in the almanac tradition: established as reported in that tradition. That the mansion was considered ominous: established.

Breath 10. Land

Not a place. **An office.**

This is the only rung in the study where the cluster's anchoring is bureaucratic rather than geographic. The sky in the Chinese scheme is an imperial court [267], the mansions are its divisions, and the *Shiji*'s Treatise on the Celestial Offices is literally a treatise on celestial **administration**. Mao is mansion eighteen, fourth of the western seven, in the metal register of the autumn quadrant, with the rooster as its animal and Sunday as its day [264].

The Chinese calendar was considered a symbol of a dynasty [271]. Observation was a state function, carried out by official astronomers, and the record is an archive rather than a tradition.

So where Australia anchors this cluster in waterholes, India in a hill and a temple, Mesopotamia in three royal cities, and the woodlands in a townhouse and a pine tree, **China anchors it in a filing system.**

Grade: established.

Breath 11. Word

Carried by **the longest continuous observational archive in the world**, and by three later layers on top of it.

Oracle bones at Anyang from the mid Shang, with mansion names, about 1300 to 1200 BCE [271, 270]. The Zeng Hou Yi lacquer chest, about 433 BC [270, 272]. The *Huainanzi* of 139 BCE with the first complete list [269]. The *Shiji*'s Treatise on the Celestial Offices. The *Shuowen Jiezi* for the etymology. Then the *Xiuyao jing* in the eighth century bringing the Indian layer. Then the zoomorphic iconography, whose complete form arrives in the eleventh century [274]. And then the almanac tradition, the *Tong Shu*, which is still printed and still consulted.

Japanese astronomy closely followed the Chinese tradition [272], and Korea and Vietnam inherited the same system, which is why Subaru coexists with Mao in Japan.

Grade: established.

Breath 12. Wound

China's tradition was not destroyed. It was **superseded**, and then argued over.

The practice of astronomy in China was fundamentally changed by extended contact with Western astronomy from the sixteenth century, when the telescope arrived [271]. Detailed records had been kept from about the sixth century BCE until then [271].

And the scholarly wound is specific to this study's question. **Carl Bezold, and later Joseph Needham citing him in *Science and Civilisation in China*, emphasised Babylonian influence on Chinese astrology and suggested a foreign origin for the twenty-eight lunar mansions** [265].

That claim has been contested since, and the Sungkyun study this pass draws on is an argument for indigenous Chinese interpretation against it [274].

Which bears directly on the open question Deep Pass Six left. That pass asked whether Babylon and India independently put this cluster at the head of their lunar-station lists. Here is the same question in its third form, and it is a century old in the literature: are the Chinese mansions, the Indian nakshatras and the Babylonian path of the moon three independent inventions, two, or one?

This study cannot settle it and should not pretend to. What it can do is record that **the single most consequential open question about the Pleiades is not about the Pleiades at all. It is about whether the lunar-station systems are related.** If they are, then the cluster's position in them is one fact, not three. If they are not, then three civilisations independently built mansion systems and two of them independently chose this cluster to begin with.

Grades. That Chinese astronomy was transformed by contact with the West from the sixteenth century: established. That Bezold and Needham argued for Babylonian influence and a foreign origin for the mansions: established as their position. That the mansions are of foreign origin: contested, and actively disputed. That the relation between the three mansion systems is the study's most consequential open question: this study's own judgement.

Breath 13. Return

What does China say the cluster is for?

For rectifying midwinter. When the day is short and Mao is seen at the zenith at sunset, the solstice has come and the year can be corrected [260].

For closing things. Within the asterism system the Pleiades mansion symbolises the gathering in and closure of all things, and governs the western autumn gate [261].

And for judgment. The imperial seal, formal judgments, the carrying out of sentences [264].

Midwinter fixed, the year gathered in, and the sentences carried out. China's cluster is for finishing.

Grade: established as the sources give it.

WHAT WAS SEEN

The maned head of the White Tiger of the West, mansion eighteen of twenty-eight, seven stars, ominous, governing disasters, the imperial seal and the carrying out of sentences. And a season rule from the oldest Chinese books: when the day is short and Mao stands overhead at dusk, it is midwinter.

WHAT WAS UNSEEN

That China and the Haudenosaunee found the same clock.

Both are mid-northern peoples. Both took the cluster's **evening culmination in midwinter** as the turn of the year. Neither could have told the other. Of all the events this cluster offers, that is not the obvious one, and two societies on opposite sides of the Pacific chose it.

And that when the Indian system reached China in the eighth century, it brought six stars and Agni and a dish of curds with it, which we can watch arriving in a named monk's translation.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude of the Chinese heartland	about 30° to 40° N	the cluster passes high; the zenith rule works
Declination of the Pleiades	about +24°	culminates high across China and the woodlands alike
The marker	**evening culmination at midwinter** [260]	the same choice the woodlands made
Mansion number	18 of 28, 17 Tauri as anchor star [267, 268]	not the head of the system
Head of the Chinese system	Jiao, the Horn, anchored on Spica, marking the autumnal equinox [269]	China anchored on the autumn, not the spring
Head of the Babylonian path	MUL.MUL, the Pleiades	anchored on the cluster
Head of the earliest Indian list	Krittika, the Pleiades	anchored on the cluster
Classical Chinese count	seven [260]	the native figure
Xiuyao jing count	six [266]	the imported figure

The geometric point

The evening culmination is a harder observation than the dawn rising, and it is better.

A heliacal rising requires catching a faint cluster in brightening twilight on a clear eastern horizon, and the date it yields depends on the observer's eyesight, the air and the horizon profile. Deep Pass One showed the consequence: Greek records of the Pleiades' rising differ from modern calculation by two weeks.

A culmination is different. The cluster crosses the meridian at a definite moment, high in the sky, far from horizon haze, and at the solstice it does so at a predictable hour after sunset. **The event is sharp, repeatable, and almost independent of eyesight.**

Which is why two literate or semi-literate mid-latitude societies, needing to fix the solstice precisely, both landed on it. It is the most accurate thing this cluster can do, and the peoples who most needed accuracy found it.

THE LEDGER

Claim	Grade
Mao means Hairy Head; the *Shuowen* glosses *mao* as hair	established
The *Shiji* calls Mao the Hair Head	established as the text
Mao is linked to Liu with a sense of clustering	established as reported
Mao is the eleventh member of the Gathered Together family	supported
The hair sense converges with Mesopotamian zappu	supported
Mao is the Hairy Head of the White Tiger, mansion 18 of 28	established
Its animal totem is the rooster	established in the almanac tradition
China's rooster belongs to the post-Neolithic Southeast Asian bird spread	open
The classical Chinese count is seven	established
The *Xiuyao jing* gives six stars, Agni, and curds as the offering	established as the text
Amoghavajra translated or compiled it in the eighth century	established
This is documented transmission of the Indian system into China	established as the scholarly view
The classical Chinese material is non-narrative	established
The Seven Fairies identification is late folklore	supported
The Chinese record contains no missing star	established as a meaningful absence
There is no pursuit motif; Orion and the cluster are parts of one animal	established
The Canon of Yao gives the midwinter zenith rule	established as the text
China and the Haudenosaunee independently used the midwinter evening culmination	**supported**
The Chinese system begins with the Horn and Spica, not the Pleiades	established
Mansion names appear on Shang oracle bones about 1200 BCE	established
The mansion system is third-millennium	not supported; evidence lacking

Claim	Grade
Mao governs the imperial seal, judgments and the carrying out of sentences	established in the almanac tradition
The mansion was considered ominous	established
Bezold and Needham argued for Babylonian origin of the mansions	established as their position
The mansions are of foreign origin	contested, actively disputed

NEAR-TRUTHS

- **Mao is hair and crowd at once.** The one name in the study that belongs to two of the study's own families simultaneously, and the *Shuowen* and the *Shiji* support both.
- **Six arrived with a monk.** Not inferred, not reconstructed. A text, a translator, a date, and the count dropping from seven to six because India sent it.
- **Agni came too.** The presiding deity of Krittika, carried intact into a Chinese Buddhist sutra, with a food offering attached.
- **Two literate astronomies, two great western beasts, and the cluster is fur on both.** Bull's bristle and tiger's mane.
- **And China did not put it first.** Which makes the Babylonian and Indian agreement a real question rather than an inevitability.

THREE ILLUMINATIONS

The First: Two Peoples Found the Same Clock Across the Pacific

Of all the events this cluster offers, the evening culmination at midwinter is the least obvious and the most accurate. The *Book of History* has it: when the day is short and Mao is seen, it rectifies midwinter [260]. The Haudenosaunee have it: the cluster overhead at evening, then the next new moon, then five days.

Thirty-five degrees north and forty-three degrees north. China and the Finger Lakes. No contact.

This is the clearest case of convergence on an observational method, rather than on a story, anywhere in the study. And it is better evidence for the ladder's central finding than any amount of absent narrative, because it shows two societies independently solving the same technical problem with the same technique.

Grade: supported. Two established facts, compared here for the first time.

The Second: Two for Two, No Missing Star

Mesopotamia: two thousand years of records, no missing star. China: three thousand years, no missing star.

The two oldest and largest written astronomical records on Earth, developed independently, both naming this cluster constantly, and neither one ever reports that a member cannot be found.

The anomaly is loudest where the records are shortest. Greece, with eight centuries of literature, has three incompatible accounts. The traditions collected by nineteenth-century ethnographers have the rest. The two civilisations that wrote everything down for millennia have none.

That is the shape of a problem being solved locally and late, not of a memory being carried.

Grade: established as the absence; supported as the inference.

The Third: The Real Question Is About the Mansions, Not the Pleiades

Babylon headed its path of the moon with this cluster. India headed its earliest nakshatra list with it. China headed its mansions with Spica instead, and put the cluster eighteenth. And in the eighth century the Indian system walked into China in a monk's translation, carrying six stars and Agni.

Bezold and Needham thought the Chinese mansions were Babylonian in origin; others have argued for indigenous development ever since [265, 274].

So the question this study keeps arriving at is not whether a Pleiades story is a hundred thousand years old. It is whether the three great lunar-station systems are three things or one.

If they are related, then the cluster's prominence in two of them is a single historical fact with a route, like the Bantu digging stars and the steppe's stolen girl. If they are independent, then two civilisations separately chose this cluster to begin time with, which would be the strongest convergence finding in the entire study.

Either answer is more interesting than the question we started with. Neither can be settled here.

Grade: open, and recorded as the study's most consequential unresolved question, now in its third form.

> ✦ Practice: rectifying midwinter Breathe in and let the day be at its shortest. Soft pause of two counts. Breathe out and let the year be corrected. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER SEVEN

Held and strengthened: - The calendar is the constant. Seven for seven. - The function is older than the story, and the two great literate astronomies have function and no story at all. - No missing star in either great written record. Two for two. - The Gathered Together family now stands at eleven.

New after China: - China and the Haudenosaunee independently found the midwinter evening culmination. The first convergence of observational method in the study. - The zappu and Mao convergence confirmed from the Chinese side: two literate astronomies, two western beasts, fur in both. - Documented transmission with a name and a date: the *Xiuyao jing*, Amoghavajra, six stars, Agni and curds, in the eighth century. - China did not head its mansion system with this cluster, which makes the Babylonian and Indian choice a real question. - And the study's central open question is now clearly stated: are the three lunar-station systems related?

Next rung: Bantu Africa. The digging stars, the one Pleiades tradition whose spread we can trace in the vocabulary itself, plus the Luba myth in which the cluster is one of the three things that come back. It is the control case, and it has no sisters in it at all.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The Chinese material is read through a peer-reviewed study of the lunar mansions, the Baidu encyclopaedia entries, standard reference works and a contemporary almanac site, not from the classical texts in Chinese. The Canon of Yao passage is given in the Baidu encyclopaedia's rendering and should be checked against a scholarly translation. The almanac readings in Breath 9 are from a living divinatory tradition and are reported as that tradition's own, not as classical philology. The author reads everything and decides what goes on the page.

Bantu Africa · The Digging Stars

Why Bantu Africa is the eighth rung

Seven rungs are up. The calendar is seven for seven. The two great literate astronomies have a function and no story and no missing star. The number seven belongs to the Great Bear across Eurasia. The missing seventh has eight solutions in six traditions. China and the Haudenosaunee independently found the midwinter evening culmination.

Bantu Africa is the eighth rung because it is **the control case**, and the study needs one.

Everywhere else, this study has had to infer whether a tradition spread or arose independently. Here the answer is written in the vocabulary. One verb root, meaning to cultivate, carried across a third of a continent with the Bantu expansion, giving the cluster a name in dozens of languages that are all visibly the same name.

And what travelled with it was a digging stick. No sisters, no pursuit, no missing one. The clearest traceable spread of a Pleiades tradition on Earth carried a farming instruction and nothing else.

This pass also found two things the first gather did not reach: an origin-of-death myth in which the cluster is one of the three things that come back, and a people for whom the cluster is the unit in which a man counts his own age.

THE THIRTEEN BREATHS

Breath 1. Sky

Bantu Africa spans from Cameroon and the Congo basin at the equator down to the Eastern Cape at about 33 degrees south: the whole tropical and subtropical band of the continent south and east of the forest.

Two facts about that band govern everything in this pass.

The cluster rises and sets everywhere in it. Africa straddles the equator and includes the tropics and temperate regions, so its night sky includes heliacal risings [275]. There is no

circumpolar alternative. Deep Pass Four recorded Berezkin's finding that Ursa Major was largely ignored in sub-Saharan Africa, though Bantu and Mande speakers knew it, because circumpolar stars are not useful for counting calendar time.

So this cluster had no competition. Berezkin's judgement is blunt: in sub-Saharan Africa the Pleiades were the only stellar object that systematically attracted people's attention [276].

And the latitude band is wide, so the same event means different months at different ends of it. Holbrook notes that because local conditions differ, peoples adjusted the time at which the Pleiades were observed.

Grade: established.

Breath 2. Name

One verb, forty peoples, three thousand kilometres

The name comes from a Bantu verb root meaning to cultivate, and across the family it is visibly one word.

Language	Name
Swahili	kilimia [277]
Giryama	kirimira [277]
Kaguru	chilimia [277]
Nyabungu	kelemera [277]
Nyasa	lemila [277]
Karanga	chirimera [277]
Venda	tshilimela [277, 278]
Tsonga	shirimela [277, 278]
Sotho and Tswana	selemela [277, 278]
Xhosa and Zulu	isiLimela [277, 278]

The Swahili form is reconstructed from Proto-Bantu *ki-dimida* and is found across Bantu zones E, F, G, J, L and S [277].

The glosses are consistent and practical. The Ploughing Stars or the Digging Stars in Swahili [277, 278]. The planting-sign in Bryant's translation of isiLimela, the digging-for stars in Frazer's [277].

And the spread is not inferred. It is visible. These related names are held to come from a common source carried into central, eastern and southern Africa with the migration of Bantu speakers, with local peoples adjusting the times at which the cluster was observed to suit their own conditions.

Which makes this the study's control case

Every other rung has forced a judgement call. Did Greece and India inherit the seven men from the steppe, or not? Are the three mansion systems related? Did the Nebra disc copy a Near Eastern glyph?

Here there is no judgement call. **A single Pleiades tradition is demonstrably shared across dozens of peoples over an enormous area, and we can date it, trace its route, and read its content, and its content is a hoe.**

Anyone arguing that a Pleiades tradition must be ancient because it is widespread has to explain why the one spread we can actually see is recent, is visible in the vocabulary, and contains no sisters at all.

Grades. That the names form one Bantu family from a root meaning to cultivate: established. That they spread with the Bantu expansion: established as the linguistic consensus. That Proto-Bantu *ki-dimida underlies the Swahili form: established. That any sisters tradition underlies them: **not supported**.

Breath 3. Form

A tool, and a season, and nothing with a face.

The cluster is not a person, a god, an animal or a crew. It is the sign to dig. The Xhosa and Zulu name is a planting-sign; the Swahili is the ploughing stars; the whole family names an agricultural act.

One source reports that the Digging Stars cluster appears in the shape of a plough [279], which if it reflects the tradition rather than the writer would make it an iconic name as well as a functional one. That is graded contested; the etymology is from the verb, not from a resemblance.

Where character is attached, it is warmth rather than personality. The iSilimela are described as friendly and comforting stars who watch over the family, and when the cluster appears in the east mothers lift their children and teach them to stretch out their hands towards it [280].

That matches the Khoikhoi detail the first gather recorded, that the Pleiades are considered friendly and children are taught to stretch their hands toward them. The same June twilight announces the new agricultural year to pastoralists across the region, which is why the cluster carries the digging name at all [293]. **Two neighbouring but unrelated language families, Bantu and Khoe, both teach small children to reach for this cluster.**

Grades. That the cluster is named for an agricultural act and not a being: established. That it is described as friendly and that children are taught to reach for it: established as reported. That the name derives from a resemblance to a plough: contested; the etymology is verbal.

Breath 4. Number

No number. Anywhere in the family.

Not six, not seven, not nine. The name is a verb with a class prefix. The cluster is the thing that means dig, and how many stars it contains is not part of the tradition.

One modern Xhosa source refers to the Seven Stars as having sacred significance in Xhosa lore [281], but that phrase is the English common name and should not be read back into the Bantu name, which contains no count.

So Bantu Africa joins the Gathered Together family in the strongest possible way: not by naming the clustering, but by not naming anything about the stars at all. The name is entirely about what people do when it appears.

Grades. That the Bantu names contain no numeral: established. That the modern use of Seven Stars reflects the English name rather than the tradition: supported.

Breath 5. Story

The Luba myth, and it is the deepest answer in the study

The Luba, or Baluba, of the Democratic Republic of Congo tell of Fidi Mukullu.

He sent the Sun to fetch him palm wine, and the Moon, and the Pleiades, and a human [282]. Then he placed the Sun, the Moon, the Pleiades and the human in a special ditch [282]. The Sun emerged, and the Moon emerged, and the Pleiades emerged. The human lied, and is punished with having to die [282].

Berezkin gives the same myth in its interpretive form, from Abrahamsson: the Sun, the Moon and the Pleiades successfully sustained a test suggested by God while the man failed it, and **because of this the Sun rises every day, the Moon every month, the Pleiades every year, and the man dies forever** [283, 284].

Holbrook's version adds the local precision: the Moon is reborn monthly, and **the Pleiades is reborn every rainy season** [282].

Why this is the deepest answer the study has found

Every tradition in this ladder has told us what the cluster is *for*. Hesiod: harvest. Babylon: insert the thirteenth month. India: light the fire. The Haudenosaunee: hold the New Year. China: rectify midwinter.

The Luba tell us what the cluster *is*. It is one of the three things that come back, and it is specifically the one whose period is the year.

Sun, moon, Pleiades: day, month, year. Three returning bodies, three nested periods, and a fourth creature who does not return and therefore dies. That is a complete cosmology of recurrence, and this cluster holds the longest of its three terms.

It also answers a question the ladder has been circling. Berezkin observes that in sub-Saharan Africa the Pleiades seem to have been treated as separate from the other constellations, in a way similar to the Sun and the Moon [284]. The Luba myth is why: **in this region the cluster is not a constellation at all. It is a third luminary.**

Grades. That the Luba Fidi Mukullu myth is as given: established, on Holbrook and on Berezkin citing Abrahamsson 1951. That the cluster is grouped with the Sun and Moon rather than with constellations: established as Berezkin's reading. That this is an origin-of-death myth: established.

Breath 6. Missing

Nothing. And in this region the absence is structural rather than accidental.

There is no missing member because there is no count, and there is no count because the name is a verb. A tradition that calls the cluster *the digging* cannot have a lost sister any more than a tradition that calls a month *harvest* can have a lost week.

Three for three now among the traditions with no missing star: Mesopotamia, China and Bantu Africa. And they fail to have one for three different reasons. Mesopotamia because seven came from its arithmetic. China because the count was simply not made an issue. Bantu Africa because the cluster was never counted.

Grade: established as an absence, and explained.

Breath 7. Pursuit

None in the Bantu material.

Orion is in the southern African sky and is richly storied, but in the neighbouring Khoe traditions rather than in these. The Khoikhoi have the hunter Aob, who is Aldebaran, sent by his wives the ǃ Khunuseti to shoot the three zebras of Orion's belt, and who fails. The /Xam saw Aldebaran as the Male Hartebeest with Betelgeuse as its mate [285].

So the pursuit motif exists in southern Africa, in Khoe tradition, and it is not in the Bantu tradition that lives alongside it. Two peoples sharing the same sky and the same country for centuries, one with a story of wives and a hunter, one with a digging stick.

Berezkin adds the regional frame: the Cosmic Hunt is the only widespread star myth in sub-Saharan Africa, and it is always related to Orion there [283]. So the hunting story in this continent attaches to Orion, and the Pleiades stays out of it.

Grades. That the Bantu tradition contains no pursuit motif: established. That the neighbouring Khoe traditions do have a hunter-and-wives story: established. That the Cosmic Hunt in sub-Saharan Africa attaches to Orion: established on Berezkin.

Breath 8. Year

The whole content of the tradition, and it is more varied than the first gather allowed

The first gather treated this as one rule: heliacal rising means plant. The reality is three different observations, used by different peoples, and one of them matters a great deal.

The heliacal rising. The Zulu started their new year with the heliacal rise of the Pleiades [286]. In Zambia, the Lozi and the Ila use the heliacal rise to start their new year [286, 287]. The Xhosa watch for the first appearance of isiLimela in June [278], and the Xhosa year begins then [288].

The evening rising in the east. The Senga of Zambia use the Pleiades rising in the east at sunset to start their new year [286]. That is the acronychal rising, a different event half a year away from the heliacal one.

And the evening culmination. The Zulu, the Khoikhoi and the Setswana associated the position of the Pleiades in the night sky, for example **when the Pleiades is overhead at sunset**, with the time to start cultivation [286, 287].

Which is the third independent instance of the midwinter zenith

Deep Pass Seven's first illumination was that China and the Haudenosaunee independently found the evening culmination, the least obvious and most accurate of this cluster's events.

Southern Africa found it too.

Three regions now: China at about 35 degrees north, the Haudenosaunee at about 43 north, and the Zulu, Khoikhoi and Setswana at about 26 to 30 degrees south. Three continents, two hemispheres, no contact between any of them.

That substantially strengthens the finding and changes its character. It is no longer a striking coincidence between two peoples. **It is a repeatable discovery: peoples who need to fix a seasonal moment precisely converge on the cluster's culmination, because it is the one event that does not depend on the horizon or on the eye.**

And it adds a fourth usable event to the list, since the Senga use the acronychal rising: this cluster offers the dawn rising, the dawn setting, the evening setting, the evening rising and the culmination, and somewhere in the world each of the five is somebody's new year.

The Xhosa calendar. The year begins in June, Isilimela, the month of the Pleiades and of cultivating and planting, and ends in May, uCanzibe, the month of Canopus, which signals harvest [279, 289]. Callaway records the saying directly: isiLimela is renewed, and the year is renewed, and so we begin to dig [290].

Grades. That the Zulu, Lozi, Ila and Xhosa use the heliacal rising for the new year: established. That the Senga use the evening rising: established. That the Zulu, Khoikhoi and Setswana used the evening culmination to time cultivation: established, on Bennet and Chaplin as cited by Holbrook. That this is a third independent instance of the culmination rule: supported, and this study's own comparison.

Breath 9. Rite

The cluster is the unit in which a man counts his life

This is the finding of this pass and it exists nowhere else in the study.

Among the Xhosa, the coming-out ceremony of the abakwetha circumcision school, when boys become men, was determined by the appearance of this cluster [291]. And it is the custom for Xhosa men to **count their years of manhood from that date** [291, 290].

Not in years. In **izilimela**. An adult Xhosa man counts his adult years by the number of izilimela, Pleiades, he has seen since coming back from the mountains [281].

One contemporary account gives the practice in the first person: we start counting our years of manhood from the month of the Digging Stars, when Eyesilimela first becomes visible, mourning and celebrating the end of boyhood; *Isilimela sam sinye*, my first Isilimela [292].

The month of the Digging Stars is said to symbolise new life in man [278]. The initiation traditionally took place in June, the first month of the Xhosa calendar, which also suited the practice because a winter wound is less likely to go septic [281].

What that means

Every other tradition in this study uses the cluster to measure **public** time: the year, the month to plant, the day of a festival, the insertion of a leap month.

The Xhosa use it to measure a person. A man is so many Pleiades old. The cluster is not on his calendar; it is in his biography.

Of all the uses this ladder has found, that is the most intimate, and it is in the one tradition with no story about the cluster at all. Bantu Africa gave this cluster no face, no gender, no number and no plot, and then made it the measure of a life.

Grades. That the Xhosa initiation ceremony was timed by the cluster's appearance: established. That Xhosa men count their years of manhood in izilimela: established, reported consistently across ethnographic and community sources. That the month symbolised new life in man: established as reported.

Breath 10. Land

The field, and the mountain.

There is no temple, no songline, no sacred hill and no named rock. The anchoring is to **worked ground**: the cluster appears and the hoeing begins.

And to the initiation lodge in the hills, where the boys go and from which a man returns to begin counting his izilimela [281].

Grade: established.

Breath 11. Word

Carried by **a verb in everyday speech**, which is the most durable carrier of all and the one with the least ceremony attached.

This is worth setting against the other rungs. Greece carried its tradition in manuscripts. Mesopotamia in clay archives. China in a state observatory and an almanac. India in recitation, a festival and a wedding rite. Australia in songline and performance. The woodlands in storytelling and a nine-day ceremony.

Bantu Africa carried it in the ordinary word for a set of stars, which every speaker of forty languages uses without thinking about it, and which happens to mean *the digging*.

A tradition that lives inside basic vocabulary does not need to be transmitted. It is transmitted by people learning to talk.

Which is exactly why we can trace it. Vocabulary leaves a trail; stories do not.

Grade: established.

Breath 12. Wound

The wound here is colonial record-making and the loss of the calendar's authority, not the loss of the tradition itself.

The sources are nineteenth-century missionary and settler ethnography. Callaway for the Zulu saying [290]. Bryant and Frazer for the translations of isiLimela [277]. Chaplin and

Hirschberg and Frazer again for the Zambian and wider material [287]. These are reports of traditions, through the categories of the recorders.

And the civil calendar displaced the ritual one. Most Xhosa boys now go to the mountains during the December school holidays, whereas it used to be June, the first month of the Xhosa calendar [281]. The initiation that was once fixed by the cluster's first appearance is now fixed by the school year.

That is the third case of this in the ladder, and the pattern is now clear.

Tradition	What replaced the Pleiades rule
India	precession moved the equinox; the nakshatra list was re-headed with Ashvini
Haudenosaunee	Handsome Lake substituted the first new moon of January
Xhosa	**the December school holidays**

Three mechanisms: the sky moved, a prophet reformed, and a timetable won. The last is the quietest and probably the commonest.

Grades. That the principal published sources are colonial-era: established. That Xhosa initiation has shifted from June to the December holidays: established as reported. That this represents a civil calendar displacing a stellar one: supported.

Breath 13. Return

What does Bantu Africa say the cluster is for?

For digging. The name is the answer and there is no second layer.

And beneath that, from the Luba: for being one of the three things that come back. The sun every day, the moon every month, the Pleiades every year, and the man not at all.

Grade: established.

WHAT WAS SEEN

One word, from a verb meaning to cultivate, carried across a third of a continent with the Bantu expansion, giving dozens of unrelated-sounding peoples the same name for this cluster: the digging stars. And the instruction that goes with it: it is up, the year is renewed, begin to dig.

WHAT WAS UNSEEN

That the one Pleiades tradition on Earth whose spread we can actually watch contains no sisters, no pursuit, no missing one and no number at all.

And that the people who gave the cluster the least personality gave it the most intimate job. A Xhosa man does not count his adult years in years. He counts them in izilimela, in Pleiades, one for each time the digging stars have come back since he came down from the mountain.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude band	about 5° N to 33° S	the cluster rises and sets everywhere in it
Circumpolar alternative	none usable	the Bear is low and useless; the cluster has no competitor [276]
Heliacal rising at Xhosa latitude	June [278, 288]	the Xhosa new year and initiation month
Heliacal rising at equatorial latitude	mid-June in 2021 by one calculation [282]	the Luba rainy-season return
Events in use across the region	heliacal rising, evening rising, evening culmination [286]	three of the cluster's five
The culmination rule	Zulu, Khoikhoi, Setswana: overhead at sunset means cultivate [286]	**third independent instance worldwide**
Latitude spread of the name family	about 3,000 km	each people adjusted the observation locally

The geometric point

One name, one instruction, and a sky event that shifts with latitude.

The Bantu expansion carried a word and a rule across three thousand kilometres of latitude. But the heliacal rising of this cluster does not happen on the same date at Mombasa and at East London, and the rains do not come at the same time either.

So the tradition did the only thing it could: it kept the name and the instruction and **changed the observation**. Local peoples adjusted the times at which the cluster was observed. Some took the dawn rising, some the evening rising, some the overhead position.

That is the mechanism of this whole study in one region. **The function is constant, the event is chosen locally, and the name travels unchanged.** A story would have had to be retold. A verb only had to be inflected.

THE LEDGER

Claim	Grade
The Bantu names form one family from a root meaning to cultivate	established
They spread with the Bantu expansion	established as the linguistic consensus
Proto-Bantu *ki-dimida underlies the Swahili form	established
Any sisters tradition underlies them	**not supported**
The cluster is named for an act, not a being	established
The Bantu names contain no numeral	established
The cluster is described as friendly and children are taught to reach for it	established as reported
The name derives from a resemblance to a plough	contested; the etymology is verbal
The Luba Fidi Mukullu myth is as given	established
The cluster is grouped with the Sun and Moon rather than with constellations	established as Berezkin's reading
The Bantu record contains no missing star, and cannot	established and explained
The Bantu tradition contains no pursuit motif	established
Neighbouring Khoe traditions do have a hunter-and-wives story	established
The Cosmic Hunt in sub-Saharan Africa attaches to Orion	established on Berezkin
Zulu, Lozi, Ila and Xhosa use the heliacal rising for the new year	established
The Senga use the evening rising	established
Zulu, Khoikhoi and Setswana used the **evening culmination** to time cultivation	established
This is a third independent instance of the culmination rule	**supported**
Xhosa initiation was timed by the cluster's appearance	established
Xhosa men count their years of manhood in izilimela	established
The principal published sources are colonial-era ethnography	established
Xhosa initiation has shifted from June to the December holidays	established as reported

NEAR-TRUTHS

- **The control case did its job.** The one traceable spread of a Pleiades tradition is recent, visible in the vocabulary, and carries a hoe.
- **A verb is a better carrier than a story.** It needs no teller, no occasion and no authority. It is transmitted by people learning to speak.
- **The cluster is a third luminary here, not a constellation.** Sun, moon, Pleiades: day, month, year, and the man who does not come back.
- **The culmination rule is now three for three.** China, the woodlands, and southern Africa. It has stopped being a coincidence and become a finding.
- **And a man is so many Pleiades old.** The least storied tradition in the study produced the most personal use of the cluster anywhere.

THREE ILLUMINATIONS

The First: The Only Spread We Can See Carries a Digging Stick

This is the argument the whole study rests on, and this rung is where it is demonstrated rather than inferred.

A Pleiades tradition did spread across an enormous area. We can name the mechanism, the period and the route. We can read the content in the words themselves, in forty languages that are visibly inflections of one word.

And the content is: when this comes up, start hoeing.

Not seven sisters. Not a pursuit. Not a lost one. A farming instruction, moving with farmers, at the speed of farming.

Which means the widespread presence of a Pleiades tradition tells us nothing at all about its age, and everything about what people needed from the sky.

Grade: established.

The Second: The Culmination Rule Is a Discovery, Not a Coincidence

Deep Pass Seven found China and the Haudenosaunee using the evening culmination and called it the clearest convergence of method in the study. This rung adds the Zulu, the Khoikhoi and the Setswana [286].

Three continents. Both hemispheres. Mid-northern, high-northern and mid-southern latitudes. No contact between any of the three.

Peoples who need precision converge on the culmination, because it is the one event this cluster offers that does not depend on the eastern horizon or on the observer's eyes. The heliacal rising is easier to notice and worse to measure; the culmination is harder to notice and better.

Three independent discoveries of the same technique is the strongest convergence finding in the study, and it is about **how to look**, not about what to see.

Grade: supported, and now on three cases.

The Third: The Faceless Cluster Became the Measure of a Life

Bantu Africa gave this cluster no gender, no number, no story, no face and no ceremony of its own. It gave it a verb.

And then it did something no tradition with a full mythology did: it made the cluster the unit of personal time. A man is so many izilimela old, counting from the night he came back from the mountain [281, 291].

The intimacy is inversely proportional to the mythology. Greece knew the sisters' names, their parents, their lovers and their descendants, and got nothing from them but a sailing date. The Xhosa know nothing about the cluster except that it means dig, and measure their own lives by it.

That is worth holding against every assumption this study began with about what a rich tradition looks like.

Grade: supported.

> ✦ Practice: one izilimela Breathe in and count one return. Soft pause of two counts. Breathe out and begin to dig. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER EIGHT

Held and strengthened: - The calendar is the constant. Eight for eight. - The function is older than the story, and here there is no story at all. - No missing star. Three for three among the

traditions that never counted. - The Gathered Together family stands at eleven, with Bantu Africa a twelfth case of a different kind: no count, no form, only an act.

New after Bantu Africa: - **The control case is proved.** The one traceable spread of a Pleiades tradition is recent and carries a hoe. - The Luba make the cluster a third luminary alongside the sun and moon: day, month, year, and the man who does not return. - **The culmination rule is three for three**, across three continents and both hemispheres. It is a discovery, not a coincidence. - A fifth usable event: the Senga take the evening rising. - The Xhosa count a man's age in izilimela. - And a third mechanism for a Pleiades calendar being displaced: not precession, not a prophet, but a school timetable.

Next rung: the Khoikhoi and Nama, who live in the same country as the Bantu peoples, share the same sky, and have a hunter, a set of wives and a failed shot. Two traditions side by side for centuries, one with a story and one without, is the cleanest natural experiment this study will get.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The principal sources are colonial-era ethnography read through recent secondary surveys, chiefly Holbrook's two papers, with contemporary Xhosa community and artist sources for the initiation practice. The Luba myth is given in two independent renderings, Holbrook's and Berezkin's citing Abrahamsson 1951, which agree. The Xhosa initiation material concerns a living and in parts private practice, and nothing beyond what Xhosa writers and public sources have themselves published is recorded here. The author reads everything and decides what goes on the page.

The Khoikhoi, Nama and San · The Rain Stars and the Hopeless Hunter

Why this is the natural experiment

Eight rungs are up. The last one proved the control case: the only traceable spread of a Pleiades tradition on Earth is the Bantu one, it is recent, and it carries a digging stick and nothing else.

This rung is the other half of that experiment, and it is the cleanest test the study will get.

The Khoe and San peoples of southern Africa live in the same country as the Bantu peoples, under exactly the same sky, and have done for centuries. Their languages belong to entirely different families. And unlike their Bantu neighbours they **do** have a story about this cluster: a set of wives, a husband who is Aldebaran, a herd of zebras who are Orion's Belt, one arrow, and a miss.

So here are two traditions in one country, one with a narrative and one without. If a Pleiades story is the kind of thing that spreads between neighbours, it should have spread here. If the story is the deep layer and the calendar the shallow one, the Khoe should show it.

What this pass found is the opposite of both, and it is the strongest single piece of evidence the study has produced for its central finding.

THE THIRTEEN BREATHS

Breath 1. Sky

The Khoikhoi, Nama and San peoples occupy southern Africa from Namibia to the Karoo and the Kalahari, roughly 20 to 34 degrees south: desert, semi-desert and winter-rainfall country, with some of the clearest skies on the planet.

The event that matters is the cluster's return at dawn after its weeks of absence, and what it means here is **water**.

The Khoikhoi used the Pleiades to forecast the start of the rainy season [294]. Hahn records the name directly: the Pleiades, named Khuseti or Khunuseh by the Khoikhoi, are called the **rainstars**, and their appearance indicates the rainy season is near and thus the beginning of a new year [295].

To the /Xam, the Pleiades are one of summer's things [294]. Hollmann gives the /Xam phrasing: the Pleiades are summer's things, summer's stars [296].

Grade: established.

Breath 2. Name

!Khunuseti means to gather together

This is the finding of the pass, and it was sitting in a 2014 glossary that the first gather did not reach.

Alcock's list of the Khoikhoi terms in the hunter story gives each word with its referent: *≠ab*, the arrow; *aob*, the husband, Aldebaran; *!goregu*, the zebras, the three stars of Orion's Belt; and **/Khunuseti, to gather together, the Pleiades**, the wives of the tale [297].

Read that again. The Khoikhoi have a full narrative about this cluster, with named characters and a moral. And the word they use for the cluster itself means **to gather together**.

Which is Subaru. Which is MUL.MUL. Which is Tagemmunt, and Kimah, and al-Thurayya, and nyokoaro, and Mao linked to Liu, and Ülker, and the Belarusian Sieve.

The story sits on top. The name underneath says what everyone else's name says.

And the San languages have a family of their own

Snedegar's survey records the cluster across four Khoisan languages, and they are visibly one word with one meaning [296]:

Language	Name	Gloss
!Ko	!xwe	[296]
!Kung	!xwe, tshxum	[296]
/Gwi	!xwe, or xwedzi	**a crowded bunch of stars** [296]
/Xam	//xwhai	**group of small stars** [296]

Four languages, one root, and where the gloss is given it is a crowded bunch, a group of small stars.

So southern Africa has two unrelated language families living side by side, and both of them name this cluster for its clustering. Khoe says gather together. San says crowded bunch.

And the Bantu third neighbour says nothing about the stars at all, only what to do when they appear.

One exception, and it is a story in a name

The !Xu call the cluster **Kanandura**, glossed as a group of stars thrown into the sky by God [296].

That is the only name in this entire study that contains a narrative. Everywhere else the name is a thing and the story is separate. Here the name is the story, compressed.

Grades. That !Khunuseti means to gather together: established, on Alcock's glossary as reported by Holbrook. That the !xwe family across four Khoisan languages means a crowded bunch or a group of small stars: established on Snedegar. That !Xu Kanandura is glossed as stars thrown into the sky by God: established as reported. That the Namaqua Khoikhoi called them the Stars of Spring and the Khunuseti: established.

Breath 3. Form

Wives, and daughters of the Sky God.

The Namaqua Khoikhoi spoke of the Pleiades as the Stars of Spring and called them the Khunuseti, and they were the daughters of Tsui //Goab, the Dawn or Sky God [294, 298].

For the Nama, the Pleiades are the Khunuseti, the daughters of the Sky God and the wives of Aob, which is Aldebaran [299].

And among the G//ana, Sirius and Canopus are the husbands of the Pleiades, which is a different marriage again.

So the cluster here is female, divine in parentage, and **married**. That last point separates it sharply from every other female-cluster tradition in the study.

Tradition	The women are
Greece	unmarried daughters pursued by a hunter and taken by gods
Mainland Australia	senior ceremonial women unlawfully pursued, never caught
India	the wives of the seven sages, banished for another's act
Khoikhoi and Nama	**the wives of Aldebaran, at home, sending their husband out**

The Khoe women are not fleeing anyone. They are the household, and the drama belongs to the man outside it.

Grades. That the Khunuseti are the daughters of Tsui //Goab and the wives of Aob: established as recorded. That the G//ana make Sirius and Canopus their husbands: established as reported.

Breath 4. Number

None given. Not in the Khoe material, not in the San material.

The names are plural and collective, and the stories speak of the wives without counting them. One general survey notes that the cluster has usually six or seven bright members visible [300], but that is the surveyor counting, not the tradition.

So southern Africa is now three language families deep with no number: Khoe, San and Bantu. In a region where the cluster governs the agricultural year, the new year, the rains and a man's age, nobody counted it.

Grades. That no numeral appears in the Khoe or San names or stories recorded here: established as an absence in the sources consulted.

Breath 5. Story

The Curse of the Women, in full

The fullest recorded version is in Hahn's *Tsuni-//Goam: The Supreme Being of the Khoi-khoi* of 1881, and it is also called the hopeless hunter [298, 301].

Aob, the husband, who is Aldebaran, is in a polygamous marriage with the |Khunuseti, who are the Pleiades [298]. They push him to go hunting and bring home meat, and warn him not to return empty-handed [297].

He sets out after a herd of zebra, the !goregu, which is Orion's Belt, and he takes **only one arrow** [302, 303]. He shoots the ≠ab, the arrow, which is the stars of Orion's Sword, and he misses [298].

The arrow falls beyond the zebras and lies there still [304]. It landed close to where a lion, *xami*, which is Betelgeuse, was hunting the same herd from the other side [298, 297].

So he cannot retrieve his arrow, because of the lion. And he cannot go home, because he has killed nothing [299].

And there he stays.

The moral, stated by the tradition

Wessels gives it plainly: women would not consider staying with a man who did not bring meat back from the hunt [297].

The story is called the Curse of the Women [301]. It is a story about **male inadequacy judged by a household**, and it is told as a lesson in conduct, with the hopeless hunter as the warning [301].

What it is not

It is not a pursuit. Nobody is chasing the women and the women are not running.

It is not an abduction. Nobody is taken.

It is not a transformation story. The characters do not become stars at the end; they are the stars throughout.

And it contains no missing member. The arithmetic of the cluster is not part of the plot.

Grades. That the story is as given, with the Khoikhoi terms as listed: established, on Hahn 1881 and Schultze 1907 as reported by Alcock, Wessels, Snyman and Holbrook. That it is told as a moral lesson about conduct: established as reported.

Breath 6. Missing

Nothing, again. Four for four now among the traditions that never counted: Mesopotamia, China, Bantu Africa and the Khoe and San.

And here the absence is especially telling, because this *is* a story tradition. The Khoe have a full narrative with named actors and a moral, and it still has no lost sister. The presence of a story does not generate a missing member. **Only the presence of a count does.**

That sharpens the finding considerably. Across nine rungs, a missing-member motif appears only where a tradition has committed to a number and the number exceeds what the eye routinely resolves. Greece: seven named. India: seven wives, six Krittika. The woodlands: seven boys. The steppe: seven men who took one. Australia, sometimes: seven sisters.

No count, no lost sister, however rich the story.

Grade: established as an absence; the inference is supported and is now the clearest statement of it in the study.

Breath 7. Pursuit

A hunt, but not of the women, and that distinction carries the pass.

The sky here is full of hunting. Orion's Belt is three zebras, a male flanked by two females, to the Nyae Nyae !Kung [305]. The /Xam see Orion's Belt as three male tortoises hung on a stick and Orion's Sword as three female tortoises hung on a stick [306]. The /Xam saw Aldebaran as the Male Hartebeest with Betelgeuse as its mate [294, 296]. The Songye of Zaire read the Belt as a hunter with a dog and an animal [305].

And Deep Pass Four recorded Berezkin's regional judgement: the Cosmic Hunt is the only widespread star myth in sub-Saharan Africa, and it is there always related to Orion.

So the hunt is everywhere in this sky, and the Pleiades is not the quarry. The cluster is the household the hunter has to go home to.

That is the exact inversion of the Greek and Australian pattern, with the same three objects: cluster, red star, Orion. Greece: the hunter pursues the women. Australia: the sorcerer pursues the women. Southern Africa: **the women send the hunter out, and he fails.**

Grades. That the regional hunting motifs attach to Orion and the surrounding stars rather than to the Pleiades as quarry: established. That the Khoe story inverts the pursuit relation: supported.

Breath 8. Year

The same four uses as the Bantu neighbours, with one addition and one discrepancy to record honestly.

The rains. The Khoikhoi used the cluster to forecast the start of the rainy season [294], and Hahn records that its appearance indicates the rainy season is near and thus the beginning of a new year [295].

The planting and the year. To many pastoralist groups of southern Africa, the first visibility of the cluster in morning twilight announced the start of the planting season and usually also marked the beginning of the year [300, 307].

The culmination. Deep Pass Eight established that the Khoikhoi are among the peoples who used the cluster's position overhead at sunset to time cultivation. That remains the third independent instance of the culmination rule worldwide.

And a sixth event, from East Africa. The Maasai call May the Month of the Pleiades, and **the disappearance of the Pleiades from the sky** signals the end of a season [299].

So the list of this cluster's usable events is now six: the dawn rising, the dawn setting, the evening rising, the evening setting, the culmination, and the **disappearance**. Somewhere in the world each of the six is somebody's marker.

The discrepancy, recorded rather than smoothed

Deep Pass Eight gave the Xhosa first appearance of isiLimela as **June** [308]. Several sources for the wider pastoralist region give the first visibility in morning twilight as **August or early September** [300, 307].

These cannot both be the heliacal rising at the same latitude. Either different peoples are using different criteria or different events, or some of the secondary sources are imprecise. **This pass**

does not resolve it and flags it. It matters, because the whole argument about local adjustment of a shared tradition depends on knowing exactly which event each people used.

Grades. That the Khoikhoi used the cluster to forecast the rains and mark the new year: established. That the Maasai mark May as the Month of the Pleiades and use its disappearance: established as reported. That the June and August-September datings in the sources conflict: established as a conflict, **unresolved**.

Breath 9. Rite

The children are lifted up

There is no temple here, no festival, no initiation timed by the cluster. There is one gesture, and it is recorded on both sides of the Khoe and Bantu line.

Hahn records it for the Khoikhoi: when the Pleiades appear in the east, little ones are lifted by their mothers and presented to the stars; the Pleiades are considered friendly, and the children are taught to stretch their hands toward them [295].

Deep Pass Eight found the same thing among the isiLimela: the cluster is described as friendly and comforting stars who watch over the family, and when it appears in the east mothers lift their children and teach them to stretch out their hands towards it.

Two unrelated language families, the same gesture, the same month, the same cluster.

Whether that is one practice shared across the Khoe and Bantu boundary, or two arrived at independently, this pass cannot say. It is recorded in both and it is the gentlest rite in the whole study: no offering, no fire, no dance, no sacrifice. A mother holds a child up and the child reaches.

And one belief about lightning

Hahn also records that when rain is accompanied by lightning, girls who are out in the open are killed by the lightning and converted into stars, and that young unmarried women and girls must therefore hide themselves from the rain [295].

That is a transformation motif in the region, attached to rain and to girls, and sitting beside a cluster that is called the rain stars and whose members are women. Whether the two are connected in the tradition is not stated in the sources reached here, and is left open.

Grades. That Hahn records children being lifted and taught to reach toward the cluster: established as his report. That the same gesture is recorded among isiLimela-speaking peoples: established. That the two are one shared practice: **open**. That the lightning belief is connected to the Pleiades: **open**, and not asserted.

Breath 10. Land

The open country, and the rain.

There is no site. The anchoring is to the arrival of water in a dry land, and the sources give nothing more specific.

One modern note worth recording: the /Xam country is now the site of the Square Kilometre Array, and a recent study works with the Bleek and Lloyd archive to reclaim |Xam cosmologies in the landscape where the telescopes stand, noting that different versions of these narratives are still being told in the Central Karoo by descendants of the San [309].

So the ground where the /Xam watched this cluster is now the ground where the largest radio telescope on Earth is being built, and the two are being brought into relation deliberately.

Grade: established.

Breath 11. Word

Carried by **one of the most remarkable salvage archives ever made, and by almost nothing else.**

The Bleek and Lloyd manuscripts comprise some twelve thousand pages of /Xam, recorded and translated by the linguist Wilhelm Bleek and especially by his sister-in-law Lucy Lloyd, from the 1870s [310, 311]. /Xam is now an extinct language [311]. The archive is the primary source of /Xam celestial narratives [310], and Hollmann's *Customs and Beliefs of the /Xam Bushmen* of 2000 and 2004 is the modern working of it [307, 312].

For the Khoikhoi and Nama, the equivalent is Hahn's *Tsuni-//Goam* of 1881 and Schultze of 1907 [299, 297].

So this entire rung rests on three nineteenth and early twentieth century collections, two of them by colonial-era missionaries and linguists, one of them of a language whose last speakers are gone.

And that is worth stating against Tasmania. Here the record was made, in extraordinary depth, just in time. There it was not. **The difference between a tradition we can study and one we cannot is sometimes a single person with notebooks**, and in this case it was largely Lucy Lloyd.

Grade: established.

Breath 12. Wound

Dispossession, language death, and a record made by the dispossessors.

The /Xam language is extinct [311]. The Khoikhoi were dispossessed, dispersed and in large part destroyed from the seventeenth century onward. The word Khoisan is itself a coined term covering two language groupings [311].

And the archive is the wound and the rescue at once. Bleek and Lloyd's informants were mostly convicts, brought from the Karoo to Cape Town and housed with the family while being interviewed. The twelve thousand pages exist because of a colonial prison system. The tradition survives in a form its holders did not choose.

What is recovering. Descendants of the San in the Central Karoo are still telling versions of these narratives [309], and the SKA engagement is bringing the archive back to the landscape it came from [309].

Grades. That /Xam is extinct and the archive is the primary source: established. That descendants still tell versions of these narratives: established as reported.

Breath 13. Return

What does this tradition say the cluster is for?

For the rain. They are the rainstars, and when they appear the rainy season is near and the year begins [295].

And for being friendly. They watch over the family, and when they come up in the east you hold the baby towards them [295].

The one tradition in this study with a story about a failed hunter and a disappointed household also has the gentlest relation to this cluster of any people on Earth. The cluster is not the trouble in the story. It is the home the trouble happens outside.

Grade: established as the sources give it.

WHAT WAS SEEN

The daughters of the Sky God, wives of Aldebaran, who sent their husband to hunt the three zebras of Orion's Belt with one arrow. He missed. The arrow fell beyond them and lies there still, and a lion sat beside it, and he could not fetch it and could not go home. And they are the rainstars, and when they come up in the east the mothers lift the children and teach them to reach.

WHAT WAS UNSEEN

That the name underneath the story means the same as every other name in the study.

!Khunuseti means to gather together. The one tradition in southern Africa with a full narrative about this cluster calls it, in its own language, what Japan calls it, and Sumer, and the Amazigh, and the Hebrew Bible, and Amazonia, and the Turkic steppe.

And that the San languages beside it do the same from a different family: !xwe, xwedzi, //xwhai, a crowded bunch of stars, a group of small stars.

Three language families in one country. One has a story, one has a verb, one has a crowded bunch. **All three are looking at the gathering.**

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude band	about 20° to 34° S	summer-sky cluster, exceptional transparency
The identified actors	Aldebaran, Orion's Belt, Orion's Sword, Betelgeuse, the Pleiades [298]	five objects, one scene
The arrow	iota, theta and 42 Orionis, that is the Sword [298]	it falls short and beyond, and is still there
The lion	Betelgeuse [298]	positioned on the far side of the quarry
The event used	the dawn return, forecasting the rains [294, 295]	the year begins
Also used	the evening culmination	third independent instance worldwide
And in East Africa	the **disappearance** [299]	a sixth usable event

The geometric point

This is the most completely mapped single region of sky in the whole study, and the Pleiades is the least active object in it.

The Khoe and San have identified five distinct objects in this one patch of sky and set them in a single scene with a plot: the hunter, the arrow, the quarry, the predator and the household. Every object has a role.

And the cluster's role is to be **where the hunter cannot return to**. It is the fixed point the action is measured against.

Which is the geometry doing exactly what it does everywhere else. The same five objects that gave Greece a chase and Australia a flight gave southern Africa a failed hunt, because the sky supplies a bright red star, a tight cluster, a line of three and a second red star, in that arrangement, and each people writes the relation its own life suggests.

The sky offered a household and a hunter who cannot come home, and a people who lived by hunting took it.

THE LEDGER

Claim	Grade
!Khunuseti means to gather together	established, on Alcock's glossary
The !xwe family across four Khoisan languages means a crowded bunch or group of small stars	established on Snedegar
!Xu Kanandura is glossed as stars thrown into the sky by God	established as reported
The Khunuseti are daughters of Tsui //Goab and wives of Aob	established
The G//ana make Sirius and Canopus their husbands	established as reported
No numeral appears in the Khoe or San names or stories	established as an absence in the sources consulted
The Curse of the Women is as given, with the Khoikhoi terms listed	established on Hahn 1881 and Schultze 1907 as reported
It is told as a moral lesson about conduct	established as reported
It contains no missing member	established
A missing-member motif appears only where a tradition commits to a count	supported, and now the clearest statement in the study
The regional hunting motifs attach to Orion, not to the cluster as quarry	established
The Khoe story inverts the pursuit relation	supported
The Khoikhoi used the cluster to forecast the rains and mark the new year	established
The Maasai mark May as the Month of the Pleiades and use its disappearance	established as reported
The June and August-September datings in the sources conflict	established as a conflict, **unresolved**
Hahn records children lifted and taught to reach toward the cluster	established as his report
The same gesture is recorded among isiLimela-speaking peoples	established
The two gestures are one shared practice	**open**
The lightning-and-girls belief is connected to the Pleiades	**open**, not asserted

Claim	Grade
/Xam is extinct and the Bleek and Lloyd archive is the primary source	established
Descendants in the Central Karoo still tell versions of these narratives	established as reported

NEAR-TRUTHS

- **The story is a coat.** The Khoe have the richest Pleiades narrative in Africa and the name underneath it means gathering, exactly as in nine other languages on five continents.
- **A crowded bunch of stars.** The San gloss is the plainest description of this cluster anyone has given, and it is a perfectly accurate one.
- **The sky's five objects, arranged once, read five ways.** Greece: a chase. Australia: a flight. India: a marriage and an exile. The steppe: a theft. Southern Africa: a hunter who cannot come home.
- **No count, no lost sister.** Four traditions with no number have no missing star, and one of them has a full story. The anomaly is a child of arithmetic, not of narrative.
- **And the mothers lift the children.** The gentlest rite in the study, recorded on both sides of a language boundary.

THREE ILLUMINATIONS

The First: The Natural Experiment Resolves, and the Name Wins

Two traditions, one country, one sky, centuries side by side. The Bantu peoples have a verb and no story. The Khoe and San have a full story with five named actors.

If the story were the deep thing, they would differ at the root. They do not.

!Khunuseti: to gather together. //xwhai: a group of small stars. isiLimela: the digging.

The Khoe named the clustering. The San named the clustering. The Bantu named the work. **Nobody in southern Africa named a sister, a number or a lost one,** and the one people with a full narrative about the cluster still calls it, underneath, what Japan calls it.

The story is the top layer. In the one place where we can see two traditions standing side by side under the same stars, the story differs and the naming agrees.

Grade: established as the names; supported as the inference. This is the strongest form of the ladder's central finding so far, because it is a controlled comparison rather than a chronological inference.

The Second: The Missing Sister Is a Child of Counting

Nine rungs. Four traditions with no missing star: Mesopotamia, China, Bantu Africa, and the Khoe and San. And one of those four, this one, has a rich narrative tradition about the cluster.

So it is not that story-poor traditions lack a lost sister. **It is that traditions which never committed to a number have nothing to explain.**

Where the missing member appears, a count came first: Greece's seven named daughters, India's seven wives, the woodlands' seven boys, the steppe's seven men who took one, Australia's seven sisters.

The anomaly is generated by arithmetic, and arithmetic is generated by culture. Mesopotamia got its seven from a number system. English got its seven from Greece. Nobody got it from counting the stars.

Grade: supported, and this is now the study's clearest statement of the point.

The Third: One Arrangement of Sky, Five Stories, and the Role Follows the Life

The same five objects sit in the same relation for everyone: a cluster, a bright red star behind it, three stars in a line below, a sword of fainter stars, and a second red star.

Greece made it a hunter chasing women. Australia made it a sorcerer chasing women. India ignored Orion and used the Great Bear instead. The steppe made the cluster a source of a stolen girl. Mesopotamia and China made the cluster fur on a great beast.

And a hunting people made it a hunter who missed.

The arrow is the Sword, which does fall short and beyond the Belt. The lion is Betelgeuse, which does sit on the far side. The scene is geometrically correct. What the Khoe added is the only thing the sky does not supply: **that failing to bring meat home is the worst thing a man can do.**

The sky writes the arrangement. The life writes the meaning. And the meaning here is about provisioning a household in a dry land, which is exactly what mattered.

Grade: supported.

> ✦ Practice: the rainstars Breathe in and let the dry season be long. Soft pause of two counts. Breathe out and let the rain be near. Lift something you love towards it. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER NINE

Held and strengthened: - The calendar is the constant. Nine for nine. - **The function is older than the story, now shown by controlled comparison rather than by inference.** Two traditions, one sky, and the names agree where the stories differ. - No missing star. Four for four among the traditions that never counted, including one with a rich narrative. - The Gathered Together family: !Khunuseti and the four-language !xwe family join it.

New after the Khoe and San: - **!Khunuseti means to gather together**, inside the tradition with the fullest African narrative. - The missing sister is a child of **counting**, not of storytelling. - A sixth usable event: the Maasai use the cluster's disappearance. - The mothers' gesture, recorded on both sides of a language boundary. - And one unresolved conflict in the sources: June against August-September for the southern African first visibility.

Next rung: the Amazigh, the one people in the study who hold both readings at once, calling the cluster the daughters of the night and also, in the same language family, the group.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. Every primary source here is nineteenth or early twentieth century: Hahn 1881, Bleek and Lloyd from the 1870s, Schultze 1907, read through modern surveys by Snedegar, Hollmann, Alcock, Wessels and Holbrook. The /Xam language is extinct and its speakers' circumstances when recorded were not free. The June against August-September conflict in Breath 8 is flagged and unresolved. The author reads everything and decides what goes on the page.

The Amazigh · Daughters of the Night, and The Group

Why the Amazigh are the tenth rung

Nine rungs are up and the central finding has hardened from an inference into a controlled result. Deep Pass Nine put two traditions side by side under one sky and found the stories differing and the names agreeing: !Khunuseti, to gather together, sitting underneath Africa's richest Pleiades narrative.

The Amazigh are the tenth rung because they do inside **one language family** what southern Africa did across three. They hold both readings at once, in their own words, with no contradiction felt.

And this pass turns up two things the study has needed for a long time: the name of the scholar whose single sentence underwrites the entire popular belief about this cluster, and a flat statement by the author of the hundred-thousand-year proposal that contradicts the eyesight explanation outright.

THE THIRTEEN BREATHS

Breath 1. Sky

The Amazigh lands run from the Atlantic coast of Morocco across the Atlas and the northern Sahara to the Libyan desert and south into the Sahel, roughly 15 to 36 degrees north.

Two events govern the year here and the tradition names both of them in a single sentence, which is treated in Breath 8.

For the Tuareg of the deep desert, this is a sky of exceptional transparency over an almost featureless horizon, which is the best observing situation in the entire study. Anything that can be seen anywhere can be seen here.

Grade: established.

Breath 2. Name

Three names, three different things, one language family

Name	Meaning	Who
Cat iheḍ, or Cat aḥăḍ	daughters of the night	Tuareg of the northern Sahara [313, 314, 315]
Tagemmunt	the group	many other Amazigh peoples [313, 315]
Amanar	the guide	reported for other Amazigh peoples [313, 316]

The Tuareg pronunciation is given as *shat ihedd* or *shat ahadd* [316, 313].

Daughters of the night is a being-name, feminine and nocturnal. **Tagemmunt** is a Gathered Together name, and joins Subaru, MUL.MUL, Kimah, al-Thurayya, !Khunuseti, //xwhai, nyokoaro, Ülker, the Sieve and Mao-linked-to-Liu. **Amanar**, the guide, would be something new: a **navigational** name, which no other people in this study has given the cluster.

And Amanar needs a flag, not a claim

Several general sources give Amanar as an Amazigh name for the Pleiades [313, 316]. But Amanar is widely given in Tuareg astronomy as the name of **Orion**, not of this cluster, and the study has not been able to resolve the conflict from the sources reached here.

This pass therefore records Amanar as contested and does not build on it. It would be a valuable finding if it held, because a desert-navigating people naming the cluster the guide would be the only navigational reading in the study, and it would sit beautifully beside the Polynesian use of the same stars at sea. That is exactly why it should not be asserted without a Tuareg-language source.

Grades. That Cat iheḍ means daughters of the night: established. That Tagemmunt means the group: established. That Amanar is an Amazigh name for the Pleiades: **contested**; it is commonly given for Orion, and this needs a specialist.

Breath 3. Form

Daughters, and a group, and nothing more.

The Tuareg name makes the cluster female and gives it a parent, the night. There is no father named, no husband, no pursuer and no genealogy.

Krupp lists the Berbers of North Africa among the older cultures in which the Pleiades were seven women, young women or daughters, alongside the ancient Greeks and the Lakota Sioux [317].

That is the whole basis for the seven-women claim here, and it needs to be stated exactly: it is one line in a general work, it supplies a count that the Amazigh name itself does not contain, and **no Amazigh narrative about these women has turned up in this study at all.**

So the Amazigh have a feminine name and, so far as this pass can establish, no story to go with it.

Grades. That Cat iheḍ names them as daughters and is feminine: established. That Amazigh tradition holds the cluster to be seven women: **contested**, resting on Krupp with no count in the name and no narrative behind it.

Breath 4. Number

None in any of the three names. Not in daughters of the night, not in the group, not in the guide.

Which makes the Amazigh the fourth tradition in a row with a feminine or storied reading and no numeral attached. Southern Africa gave wives with no count. India gave six and put the seventh elsewhere. The Torres Strait gave six men. Here: daughters, uncounted.

Grades. That none of the Amazigh names contains a numeral: established.

Breath 5. Story

None found.

This pass searched for an Amazigh Pleiades narrative and did not find one. One aggregator page carries a line about seven maids who lived long ago [316], but it is unattributed, appears beside material from other continents, and cannot be tied to any Amazigh source.

The honest position is that this study has not reached an Amazigh Pleiades story, and does not know whether one exists. The Amazigh oral literature is enormous and largely

unavailable in English. The absence here is an absence in the pass, not in the tradition, and the Tasmania rule applies: a gap in a thin record means nothing.

Grade: not supported as an absence; the record reached here is too thin for the silence to mean anything.

Breath 6. Missing

Nothing found, for the same reason and with the same caution.

Grade: no finding; the record is too thin.

Breath 7. Pursuit

Nothing found.

What this pass can say is that the three Amazigh names contain no relation to any other object. The cluster is not anyone's wife, quarry, pursued or pursuer. It belongs to the night, or it is a group, and that is all the names carry.

Grade: no pursuit motif in the names; the narrative record is not reached.

Breath 8. Year

A two-line almanac, and it is the tightest in the study

The Tuareg proverb, in Tamazight:

> *Cat aḥăḍ as uḍănăt, ttukayeɣ ttegmyeɣ, anwar daɣ ttasseɣ. As d-gmaḍent, ttukayeɣ ttegmyeɣ tabruq ttelseɣ.* [318, 319]

Rendered: when the Pleiades fall, I wake looking for my goatskin bag to drink; when they rise, I wake looking for cloth to wear [318].

And the sense is given explicitly. **When the Pleiades fall with the sun in the west, the hot season is coming**, which implies the heat and the thirst of the summer. **When the Pleiades rise from the east with the sun, the cold and rainy season is coming**, and one does well to prepare for the cold [316].

What makes it remarkable

Every other calendrical use in this study is an instruction about **work**: harvest, plough, plant, dig, sail, insert a month, light a fire, hold the New Year.

This one is an instruction about the body. Water, and clothing. Thirst, and cold. The two things a person in the deep desert has to get right or die.

It is also the most compressed. Two events, two seasons, two objects, and a man waking up. Hesiod needed eight hundred lines to say less.

And it uses two of the cluster's six events, the **evening setting** and the **dawn rising**, as a matched pair: the same object, half a year apart, meaning opposite things.

Grades. That the proverb is as given in Tamazight and in translation: established as published. That it means the evening setting brings heat and the dawn rising brings cold and rain: established as the published gloss.

Breath 9. Rite

None found attached to the cluster.

And here is the finding that does belong in this breath, because the Amazigh calendar explains why there might not be one.

The Amazigh agricultural calendar is Roman. The calendar still in use is almost certainly derived from the **Julian calendar**, introduced in the Roman province of Africa under Roman domination, and the current Berber calendar is a legacy of the provinces of Mauretania Caesariensis and Africa [320].

The month names say it plainly: yennayer, furar, meɣres, yebrir, mayyu, yunyu, yulyu, ɣuct. Latin worn smooth by Amazigh mouths [321]. The month lengths match Caesar's [321]. The Julian calendar now runs thirteen days behind the Gregorian, so the first of yennayer, the Amazigh New Year, lands on 14 January [321, 322].

And the year is divided into four seasons of three months, Tagrest the winter, Tafsut the spring, Anebdu or Iwilen the summer, and the autumn [323, 324]. Summer has its own forty days, **Ssmaym**, the dog days, from 25 July to 2 September [321].

The era is modern. The Berber calendar era, counting from the accession of Sheshonq I in 950 BC, was proposed in 1980 by the Algerian scholar Ammar Negadi, and the Berber Academy promoted Yennayer as the Amazigh New Year [325].

Which makes this the fourth displacement

Tradition	What replaced the Pleiades reckoning
India	precession; the nakshatra list re-headed with Ashvini
Haudenosaunee	Handsome Lake's reform, the first new moon of January
Xhosa	the December school holidays
Amazigh	**the Julian calendar of Roman Africa**

Four mechanisms: the sky moved, a prophet reformed, a timetable won, **and an empire arrived**.

The last is the oldest and probably the largest of the four, and it is the one case where we can see the replacement surviving the empire that brought it by some fifteen hundred years. Rome fell and its calendar stayed, and the farmers of North Africa kept it long after Rome was gone [321].

And the star reckoning survived alongside it, in a proverb. The cluster still tells a Tuareg when to carry water and when to carry cloth, while the civil year runs on Caesar's months.

Grades. That the Amazigh agricultural calendar derives from the Julian calendar introduced in Roman Africa: established. That the month names are Latin: established. That Yennayer falls on 14 January because of the Julian-Gregorian drift: established. That the Berber era dating from Sheshonq I was proposed by Ammar Negadi in 1980: established. That no Amazigh Pleiades rite exists: **not supported**; none was found and the record reached is thin.

Breath 10. Land

The desert, and the almanac is portable.

There is no site in this pass. What there is instead is the Tuareg condition: a people moving through country without landmarks, under the clearest sky on Earth, carrying their calendar in a two-line proverb rather than in a building or a stone.

Grade: established as a characterisation; no specific site found.

Breath 11. Word

Carried by **proverb**, which is the most portable carrier in the whole study.

Not scripture, not archive, not songline, not liturgy, not ceremony. Two lines of verse that rhyme in Tamazight and that any adult can say.

A proverb needs no institution, no literacy, no occasion and no specialist. It survives migration, conquest and conversion because it costs nothing to carry and is useful every year.

And it has in fact survived exactly that. The Roman calendar came, Islam came, French colonisation came, and the proverb still tells a man when to wake up thirsty.

Grade: established.

Breath 12. Wound

Two wounds, and the second one is the study's own

The historical wound is the usual North African sequence: Roman provincial rule, Arab conquest, French colonisation, and the long political marginalisation of Amazigh language and identity in the independent states, which is why the modern calendar era is a creation of the 1980 cultural revival rather than a continuous tradition [325].

And the scholarly wound is this study's. This is the thinnest rung in the ladder.

Everything in this pass comes from one encyclopaedia entry and its mirrors, one aggregator, one proverb repeated across half a dozen sites, and one line in Krupp. **No Amazigh-language source has been reached. No Tuareg astronomical ethnography has been reached. No Amazigh Pleiades narrative has been found, and the study does not know whether one exists.**

The Amanar question is unresolved. The seven-women claim rests on a single secondary line. The record here is thinner than for any other rung including Tasmania, where at least a specialist reconstruction exists.

That must be stated as a limitation and not smoothed over. A people with one of the clearest night skies on Earth and a continuous desert-navigating tradition deserves better than a Wikipedia paragraph, and this pass has given them a Wikipedia paragraph.

Grades. That the modern Berber calendar era is a 1980 creation of the cultural revival: established. That this pass rests on secondary English-language sources alone: established as a limitation.

Breath 13. Return

What do the Amazigh say the cluster is for?

For knowing whether to carry water or cloth.

When they fall, wake up and look for the goatskin bag. When they rise, wake up and look for something to wear [318].

The most practical answer any people in this study has given, in a place where getting it wrong kills you.

Grade: established.

WHAT WAS SEEN

One people, one language family, and three names for the same six points of light: the daughters of the night, the group, and possibly the guide. And a proverb that tells a man in the Sahara whether the coming season will make him thirsty or cold.

WHAT WAS UNSEEN

That the entire popular belief about this cluster rests on one sentence by one folklorist, and that nine rungs of this study contradict it.

And that the author of the hundred-thousand-year proposal has himself written that no eyesight could produce the number seven, which cuts the ground from under the explanation his critics offered on his behalf.

Both are treated in the illuminations, because they belong to the study as a whole rather than to the Amazigh.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude band	about 15° to 36° N	the cluster is high and clear
Sky quality	deep Sahara, exceptional transparency, flat horizon	the best observing conditions in the study
Events used	the **evening setting** and the **dawn rising**, as a matched pair [316]	heat and thirst, cold and rain
Interval between them	about six months	one object, two opposite meanings
The civil calendar	Julian, from Roman Africa, now 13 days behind the Gregorian [320, 321]	the star reckoning's replacement
Ssmaym, the dog days	25 July to 2 September [321]	a solar-reckoned heat season beside the stellar one

The geometric point

The Amazigh use the cluster's two most widely separated events as a single instrument.

Most peoples in this study pick one event. Greece used two, the rising and the setting, but as separate instructions for separate tasks. The Amazigh proverb binds the evening setting and the dawn rising into one saying, so that the same cluster means *thirst* at one end of the year and *cold* at the other.

That is possible because of a fact of geometry this study has not yet stated plainly: **the cluster's heliacal rising and its heliacal setting are roughly six months apart, and together they divide the year in half.** Any object on or near the ecliptic does this. What makes the Pleiades the one everybody uses is that it is compact enough for both events to be sharp.

One object, two moments, two halves of the year, and in the desert the two halves are thirst and cold.

THE LEDGER

Claim	Grade
Cat iheḍ means daughters of the night	established
Tagemmunt means the group	established
Amanar is an Amazigh name for the Pleiades	**contested**; commonly given for Orion
Amazigh tradition holds the cluster to be seven women	**contested**; rests on one line in Krupp, with no count in the name and no narrative found
None of the Amazigh names contains a numeral	established
No Amazigh Pleiades story exists	**not supported**; none found, record too thin
The Tuareg proverb is as given in Tamazight and translation	established as published
It means the evening setting brings heat and the dawn rising brings cold and rain	established as the published gloss
The Amazigh agricultural calendar derives from the Julian calendar of Roman Africa	established
Yennayer falls on 14 January from the Julian-Gregorian drift	established
The Berber era from Sheshonq I was proposed by Ammar Negadi in 1980	established
No Amazigh Pleiades rite exists	**not supported**; none found, record too thin
This pass rests on secondary English-language sources alone	established as a limitation
Stith Thompson's claim that the cluster is nearly always imagined as seven sisters	**not supported**, on the evidence of nine rungs
Norris's statement that no eyesight could produce a count of seven	established as his position, and **it conflicts with Colenso 1839**

NEAR-TRUTHS

- **Both readings, one people.** Daughters of the night and the group, in the same language family, held without contradiction. The clearest demonstration anywhere that these are not rival inheritances but two things a person can say about six lights.
- **The only almanac about the body.** Every other calendar use in the study is about work. This one is about water and cloth.

- **An empire can replace a star calendar and the star calendar can survive in a proverb.** Rome brought the Julian months, the months outlived Rome by fifteen centuries, and the Pleiades still say when to wake up thirsty.
- **And the thinness is the finding too.** The rung with the clearest sky on Earth has the thinnest record in this study, which says more about the study than about the Amazigh.

THREE ILLUMINATIONS

The First: Both Readings, One People, No Contradiction

The Tuareg call them the daughters of the night. Their Amazigh neighbours call them the group. Same language family, same desert, same sky.

Across nine previous rungs this study has treated the being-reading and the cluster-reading as two things to be weighed against each other, and has gradually found the cluster-reading underneath almost everywhere: !Khunuseti to gather together beneath the hunter story, MUL.MUL the Stars beneath the seven gods, Mao linked to Liu beneath the White Tiger's mane.

The Amazigh hold them side by side and feel no need to choose.

Which is the plainest possible statement of the finding. Daughters of the night and the group are not two inheritances from two ancestors. They are two true descriptions of the same object, and one people can carry both.

Grade: established as the names; supported as the inference.

The Second: The Received Belief Has an Author, and Nine Rungs Contradict Him

The reference literature carries this sentence: according to **Stith Thompson**, the constellation was nearly always imagined as a group of seven sisters, and their myths explain why there are only six [326].

Thompson is the folklorist of the Motif-Index, one of the most influential figures in twentieth-century comparative folklore. That single line, repeated through the reference literature, is a large part of why the seven-sisters belief feels like established fact.

Test it against this ladder.

Rung	What the cluster is
Mesopotamia	seven male gods, armed
China	the hairy head of a tiger
Bantu Africa	a verb meaning to dig
Khoe and San	a gathering, a crowded bunch
Torres Strait	six executed male crewmen
Eastern woodlands	seven boys who danced
The steppe	the source of a girl the Bear's seven men stole
India	six foster-mothers of a war god
Amazigh	daughters of the night, or the group
Greece and mainland Australia	**seven sisters**

Two of ten. And one of those two, Greece, has a name that means the sailing stars with the sisters laid on top of it.

Thompson's claim is not supported. The study can now say so with a distribution rather than an opinion, and should say so, because almost everything written for a general audience about this cluster descends from that sentence.

Grade: not supported, and this is the study's most direct correction of the received view.

The Third: Norris Says No Eyesight Gives Seven, and Colenso Says Otherwise

In the Dawes Review on Australian Aboriginal astronomy, Norris writes that it is odd that many Aboriginal cultures call the cluster the seven sisters just as in the Greek tradition, **because no combination of seeing, quality of eyesight, or sky brightness would cause a human to count seven stars** [327].

That is the author of the hundred-thousand-year proposal stating flatly that the count cannot come from looking.

And it conflicts with the evidence this study has gathered from two directions.

Deep Pass Nine and the first gather recorded Colenso's note from the far north of New Zealand in 1839: where he could see six stars clearly, Māori could see seven and sometimes eight. Deep Pass One found Greek parapegmata implying that ancient observers caught the cluster about two weeks earlier than a modern standard arc of visibility predicts.

So we have a direct scholarly conflict, and it is at the exact centre of the question:

- **Norris:** no eyesight produces seven; therefore the seven must be inherited, from a time when the stars were further apart.
- **Norris's critic:** ancient eyes were better than modern ones; therefore the seven came from looking and needs no inheritance.
- **This study, from nine rungs:** the seven mostly did not come from looking *or* from inheritance. **It came from arithmetic**, from the cultures that already had a seven, and in English it came from Greece.

Mesopotamia used its own seven-sign as a name for the cluster. The Cherokee seven is the Cherokee sacred number. The Eurasian seven belongs to the Bear. And four traditions that never committed to a count have no lost sister at all.

All three positions can be tested, and the first two have been arguing without noticing that the third is available.

Grade: the conflict is established. The resolution this study proposes is supported and is its principal contribution.

> ✦ Practice: thirst and cold Breathe in and ask what the coming season will take from you. Soft pause of two counts. Breathe out and carry the right thing. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER TEN

Held and strengthened: - The calendar is the constant. Ten for ten. - The function is older than the story, and one people holds both readings at once without contradiction. - The Gathered Together family: Tagemmunt joins.

New after the Amazigh: - The only almanac in the study about the body rather than about work. - A fourth mechanism of displacement: an empire's calendar, which outlived the empire by fifteen centuries while the star reckoning survived in a proverb. - **Stith Thompson identified as the source of the received belief, and contradicted two-for-ten by the ladder.** - **Norris's own statement that no eyesight gives seven**, set against Colenso 1839 and the Greek parapegmata, with a third explanation available that neither side has used.

Open and flagged: - Amanar: Pleiades or Orion. Needs a Tuareg-language source. - This is the thinnest rung in the study and should be rebuilt by someone with access to Amazigh scholarship.

Next rung: Mesoamerica and the Andes, where the cluster is a rattlesnake's tail, a marketplace and a granary, where a ceremony every fifty-two years turned on it, and where farmers have been forecasting El Niño from it for four hundred years.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. **It is the weakest pass in the ladder and says so.** No Amazigh-language source was reached; the material comes from one encyclopaedia entry and its mirrors, one aggregator, and one secondary line in Krupp. The Amanar identification is contested and is not used. The absence of a narrative and of a rite is recorded as an absence in the pass, not in the tradition. The two illuminations about Thompson and Norris belong to the study as a whole and were surfaced here by accident of sourcing. The author reads everything and decides what goes on the page.

Mesoamerica and the Andes · The Rattle, the Marketplace and the Granary

Why this is the eleventh rung

Ten rungs are up. The calendar is ten for ten. The seven belongs to the Bear. Stith Thompson's claim that the cluster is nearly always seven sisters stands at two for ten. The culmination rule has been found independently three times, in China, the eastern woodlands and southern Africa.

Mesoamerica and the Andes are the eleventh rung because between them they do two things no other region in this study does.

Mesoamerica built the most demanding observation in the world on this cluster, and staked the survival of the universe on it, once every fifty-two years.

And the Andes stopped using it as a clock and started using it as an instrument. Every other people in this ladder asks the cluster *when*. The Andes ask it *how bright*, and get an answer about the weather eight months ahead. In 2000 that answer was tested in *Nature* and found to work.

THE THIRTEEN BREATHS

Breath 1. Sky

Two very different observing situations, and each produced a different technique.

Mesoamerica, from about 15 to 22 degrees north. The cluster's declination is about plus 24 degrees, so from the Valley of Mexico at about 19 degrees north it passes **very near the zenith**. That geometric accident is the foundation of everything in Breath 8.

The Andes, from about 10 to 20 degrees south, at three to four thousand metres. The air is thin and clear, the horizon is high, and in late June the cluster sits **low in the north-east, not far above the horizon** [328]. That is a poor position for timekeeping and an excellent one for judging atmospheric transparency, which is what the Andes used it for.

Grade: established.

Breath 2. Name

Three names from three civilisations, and no two of them are in the same semantic field.

People	Name	Meaning
Maya	**Tzab-ek**	the rattlesnake's tail or rattle
Aztec	**Tianquiztli**	the marketplace [329]
Quechua	**Qullqa**, Collca	the storehouse or granary
Barasana	**nyokoaro**	the Star Thing

The Maya name belongs to a rattlesnake figure running through Taurus. The Aztec name is a **place of commerce**: a crowd of people in a market square. The Quechua name is the same word as the physical storehouses of the Inca road system.

Three readings of one cluster: an animal's warning, a crowd buying and selling, and a building full of grain. No people elsewhere in the study gave it any of these.

And the Aztec marketplace belongs with the Gathered Together family. A *tianquiztli* is a gathering of many small things in one place, which is what the cluster is. It is the same perception as Subaru and MUL.MUL and Tagemmunt and !Khunuseti, dressed as economics.

Grades. That Tzab-ek is the rattlesnake's rattle: established on Milbrath. That Tianquiztli means marketplace: established. That Qullqa means storehouse and is the same word as the Inca granaries: established.

Breath 3. Form

A rattle, a crowd, a building. None of them a person.

The whole region, with one exception treated in Breath 7, declines to make this cluster into beings at all. Mesoamerica makes it part of an animal, as Mesopotamia and China did. The Andes make it architecture.

That last is unique in the study. Of every people examined, only the Inca looked at this cluster and saw **a thing humans build**.

Grades. That the Mesoamerican and Andean readings are non-personal: established.

Breath 4. Number

None, in any of the four names.

Not the rattle, not the marketplace, not the storehouse, not the Star Thing. And one Andean count recorded in the ethnographic literature gives **eleven** stars, which is neither six nor seven and is simply what a sharp-eyed observer at four thousand metres can resolve.

Grades. That none of the names contains a numeral: established. That an eleven-star count is recorded in the Andes: established as reported.

Breath 5. Story

The Aztec one is not a myth but a fear

There is no narrative of beings here. What there is instead is a **stake**.

The Aztecs ran two calendars, the 260-day tonalpohualli and the 365-day solar count, which returned to the same starting pair every 52 years, after 18,980 days [330, 331]. That completion was the *xiuhmolpilli*, the Binding of the Years, and the rite was *Toxiuhmolpilia*, our years are bound [330].

They believed that after the Fifth Sun the world was likely to end again at the close of any 52-year cycle, by fire, wind, earthquake or flood [332].

And the test was this cluster. Priests in the regalia of the gods climbed at nightfall and waited for the star cluster the Nahuatl sources call Tianquiztli to **cross the zenith at midnight**. Had it stopped, or failed to reach that point, the sky would fall and the *tzitzimime*, the star demons, would come down [330].

So the story of the Pleiades in Mesoamerica is: if they keep moving, we live.

Grades. That the 52-year round is the coincidence of the 260-day and 365-day counts: established. That the rite turned on the cluster's midnight zenith passage: established. That failure was held to bring the end of the world: established as reported from the sources.

Breath 6. Missing

Nothing. Five for five now among the traditions that never counted: Mesopotamia, China, Bantu Africa, the Khoe and San, and here.

And the Andes come closest in the whole study to settling the count empirically rather than culturally. The recorded eleven-star figure is an observational statement: at that altitude, in that air, eleven is what you see.

Grade: established as an absence.

Breath 7. Pursuit

None in the civilisations of this pass, and the exception is to the north.

In Mesoamerica and the Andes there is no chase. The cluster is a rattle, a market and a granary, and nothing follows it.

The Plains exception. Among the Lakota and Cheyenne, and in Kiowa tradition, the cluster is seven maidens who fled a great bear onto a rock that rose beneath them, becoming Mato Tipila, the Bear Lodge, which settlers call Devils Tower; the bear's claws scored the tower's fluting and the sisters were lifted into the sky.

That is a full M1 and M2: seven women and a pursuer. And the pursuer is a bear.

Which is where Berezkin's finding bites. Deep Pass Four recorded his observation that in North America, Ursa Major and the Pleiades are never mentioned together, while across Eurasia the two travel as a pair. Deep Pass Four also recorded his view that the seven men of Ursa Major were carried from southern Siberia to the North American Plains.

So on the Plains we have a bear chasing seven women up a rock, in a region where the Bear's seven men arrived from Siberia and where the two constellations are never named together. **The pursuer became an animal and the link to the Bear-as-seven-men was severed.** That is a diffusion with a substitution in it, and it is the only place in the Americas where M1 and M2 are both present.

Grades. That Mesoamerica and the Andes have no pursuit motif: established. That the Plains Devils Tower tradition has seven women and a bear: established. That it relates to the Siberian seven-men motif: **open**, and worth a specialist.

Breath 8. Year

The midnight zenith, which is the most demanding observation in the study

Sahagún's account, as transmitted: on the night of the feast they called Toximmolpilia, the Binding of the Years, it so befell that **the Pleiades were at the zenith at midnight with respect to the horizon in Mexico**. On that night they made new fire, and before they made it they extinguished all the fires in all the provinces, towns and houses [333].

The procession went to Huixachtlan, also called Uixachtecatl or Citlaltepec, the thorn-tree place, now called the Hill of the Star, a volcanic hill south-east of Lake Texcoco, where a pyramid stood for the ceremony [334, 333]. They reached the summit at midnight or almost [333]. And when they drew the new fire they drew it there at Uixachtlan, **at midnight, when the night divided in half** [333], on the breast of a captive [333, 334].

When Tianquiztli reached the zenith and the Yohualtecuhtli star shone in the centre of the sky, that was the moment [334].

Then the new fire was carried out from the hill to relight every hearth in the empire, and life was assured for another 52 years [332].

Aveni's *Skywatchers of Ancient Mexico* of 1980 and its revised successor *Skywatchers* of 2001 remain the standard treatment of the astronomy [335], and the 52-year round with the Pleiades and a New Fire type of ritual appears to have been in place earlier than the Aztecs [335].

Which makes it four for four on the culmination rule

Tradition	The culmination used	Latitude
China	evening, at midwinter	about 35° N
Haudenosaunee	evening, at midwinter	about 43° N
Zulu, Khoikhoi, Setswana	overhead at sunset	about 26° to 30° S
Aztec	**midnight, once in 52 years**	about 19° N

Four independent discoveries of the same technique, on three continents and in both hemispheres.

And the Aztec version is the most exacting observation anyone in this study made. Not a rising glimpsed in twilight. Not a general position after sunset. A specific object crossing a specific

point at a specific hour on a specific night once in a human lifetime, with the end of the world riding on it.

Which was possible only because of where Tenochtitlan sits. At about 19 degrees north and with a declination near plus 24, the cluster passes close enough to the zenith for a culmination to be judged by eye against a fixed structure. **Mesoamerica used this cluster the way it did because of its latitude.**

Grades. That the New Fire Ceremony was timed by the cluster's midnight zenith passage: established on Sahagún as transmitted and on Aveni. That the ceremony took place at Huixachtlan: established. That this is a fourth independent instance of the culmination rule: supported, and this study's own comparison.

Breath 9. Rite

Two rites, and they are the two extremes of the whole study

The most catastrophic. Every fire in the empire extinguished, every household's pots and mats and images thrown away and replaced [332], a captive opened on a hill, and the universe's continuation decided by whether a cluster of stars crossed a line at midnight. Once every 52 years.

And the most quietly useful. In the Andes, Aymara- and Quechua-speaking farmers watch the sky for a week before the Catholic festival of San Juan on 24 June [328, 336]. Observations often begin around 15 June and culminate on 24 June [337]. Ten of twelve villages surveyed have a Pleiades observation on 24 June [337].

Looking toward the north-east, where the cluster shines not far above the horizon, the farmers gauge **the stars' brightness, their apparent size, the date of first appearance, and the position of the brightest star** [328, 337].

And the pilgrimage of Quyllurit'i in the Cusco region still celebrates the reappearance of Qullqa and its link to the harvest and the new year.

One people put the world on the line. Another people checked the weather. Both were doing the same thing: asking this cluster whether the coming cycle would hold.

Grades. That the New Fire rite is as described: established. That Andean farmers observe around 15 to 24 June and assess brightness, size, first appearance and the brightest star's position: established on Orlove, Chiang and Cane.

Breath 10. Land

A hill, and a storehouse, and a snowfield.

Huixachtecatl, the Hill of the Star, south-east of Lake Texcoco, with a pyramid built for the ceremony and a platform visible to the whole city below [334, 333]. The entire population of Tenochtitlan watching one hilltop for a fire.

The qullqas themselves, the storage buildings along the Inca roads and near the cities, which carry the same name as the cluster. The sky's granary and the ground's granaries are one word.

And Sinakara, where the Quyllurit'i pilgrimage goes, whose name means Lord of the Star Snow.

Grade: established.

Breath 11. Word

Carried in three different ways, and one of them is the only case of its kind in the study.

By codex and conquest-era record. The Aztec material survives mainly through Sahagún and the other sixteenth-century compilers, that is through the people who destroyed the practice [333]. The cluster appears in the Codex Borgia.

By epigraphy. The Maya identification of Tzab-ek rests on the glyphic and iconographic record, set out in Milbrath's *Star Gods of the Maya*.

And by continuous practice. The Andean observation has run, by the estimate given in the NASA account, **for more than four hundred years** [338], and it is still running: it was observed, recorded and tested in the 1990s and published in 2000.

That last is the only Pleiades tradition in this entire study that was **carried to a modern laboratory by its own practitioners' continued use, and verified there.**

Grade: established.

Breath 12. Wound

The largest destruction in the study, and the most complete survival beside it.

Mesoamerica. The Aztec state was destroyed, the codices burned, the priesthood killed, the New Fire never lit again. Everything known about the ceremony comes through the records of the conquest. Deep Pass Six found Mesopotamia's cult dead and its archive intact; here the cult is dead and the archive is the conquerors'.

And the Andes, where the practice survived underneath a Catholic one. The observation is made in the week before **San Juan**, 24 June [328, 336], and the Quyllurit'i pilgrimage carries an image of Christ painted on the boulder where a boy was buried.

The old reckoning did not die. It attached itself to the new calendar's feast days and kept running. The cluster's reappearance is still watched; the date is now a saint's day.

This is a fifth mechanism, and it is the gentlest. Not precession, not a prophet, not a timetable, not an empire's calendar. **Syncretism**: the star rule survives by borrowing the conqueror's date.

Grades. That the Aztec material survives through conquest-era compilers: established. That the Andean observation is made around the feast of San Juan: established. That this is survival by syncretism: supported.

Breath 13. Return

What do these peoples say the cluster is for?

Mesoamerica: for proving that time will continue. If it crosses the line, we get another 52 years.

The Andes: for telling you how much to plant. If it is dim, the rains will fail; plant late, plant less, plant higher.

One is cosmic and once in a lifetime. The other is agricultural and annual. Both are the same question asked at different scales: **will the coming cycle hold?**

Grade: established.

WHAT WAS SEEN

A rattlesnake's tail, a marketplace and a granary. Priests on a hill outside Tenochtitlan at midnight with every fire in the empire put out, watching for one cluster to cross the top of the sky. And farmers in the Andes in the week before midsummer, looking low into the north-east and judging how clearly they can see it.

WHAT WAS UNSEEN

That the Andes turned this cluster from a clock into an instrument.

Every other people in this study asks the Pleiades **when**. The Andes ask it **how bright**, because a cluster of faint stars low on the horizon is a measuring device for the transparency of the upper atmosphere, and the transparency of the upper atmosphere eight months before the rains tells you whether the rains will come.

They were right, and in 2000 three scientists proved it in *Nature*.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Declination of the cluster	about +24°	passes near the zenith at 19° N
Latitude of Tenochtitlan	about 19.4° N	the midnight zenith passage is judgeable by eye
The Aztec interval	52 years, 18,980 days [330]	260-day and 365-day counts recoinciding
The Aztec event	**midnight culmination** [333, 334]	the most exacting observation in the study
Latitude of Misminay, Cusco	13.0° S, 3,400 m [337]	thin clear air, high horizon
The Andean date	around 15 to 24 June [337]	the week before San Juan
The Andean position	low in the north-east, not far above the horizon [328]	maximum air-mass, maximum sensitivity
What is measured	brightness, apparent size, first appearance, position of the brightest star [328]	four photometric judgements
The mechanism	subvisual high cirrus from El Niño, reducing visibility precisely toward that horizon [339]	the cluster is a cirrus detector
The lead time	El Niño begins several months later; the rains fail October to March [336]	an eight-month forecast

The geometric point, and it is the best one in the study

The Andean method works because the cluster is in the worst possible position for seeing it.

Low in the north-east, a few degrees above the horizon, a faint compact cluster is being viewed through the greatest thickness of atmosphere available. Any haze in the upper air will dim it, and a tight knot of faint stars is far more sensitive to that than a single bright star would be, because the eye is judging whether the members separate at all.

So the thing that makes the cluster useless as a clock at that altitude and azimuth is exactly what makes it **a sensitive photometer**.

And what it is sensing is subvisual high cirrus: thin cloud that cannot be seen directly but reduces visibility precisely toward the horizon where the cluster appears at that time of year [339]. That cirrus is produced over the tropics by El Niño, and El Niño reduces Andean rainfall months later.

The farmers had found a proxy for upper-tropospheric humidity, and used it to forecast rainfall at eight months' lead, using no instrument but the eye.

Orlove, Chiang and Cane published the test in *Nature* on 6 January 2000, using satellite cloud and water-vapour data, agronomic data from the altiplano, and an index of El Niño variability [340, 341]. The farmers and the scientists were in basic agreement about the atmospheric variations and the accuracy of the forecasts [339]. Cane first heard of the practice on holiday in Peru [338].

One correction to record. One secondary summary states that a dull appearance would foretell a good year [342]. That is backwards. The *Nature* paper, the NASA account and Orlove's own popular article all have it the other way: **dimmer means drought** [336, 343]. The error is noted so it does not propagate.

THE LEDGER

Claim	Grade
Tzab-ek is the rattlesnake's rattle	established on Milbrath
Tianquiztli means marketplace	established
Qullqa means storehouse and is the same word as the Inca granaries	established
The readings are non-personal throughout the two civilisations	established
None of the names contains a numeral	established
An eleven-star count is recorded in the Andes	established as reported
The 52-year round is the recoincidence of the 260-day and 365-day counts	established
The New Fire rite turned on the cluster's midnight zenith passage	established
Failure was held to bring the end of the world and the tzitzimime	established as reported
The ceremony took place at Huixachtlan, the Hill of the Star	established
This is a fourth independent instance of the culmination rule	supported
Mesoamerica and the Andes have no pursuit motif	established
The Plains Devils Tower tradition has seven women and a bear	established
It relates to the Siberian seven-men motif	**open**
Andean farmers observe around 15 to 24 June, assessing brightness, size, first appearance and the brightest star's position	established on Orlove, Chiang and Cane
Dimmer means drought	established in *Nature* 403, 68 to 71
One secondary summary reverses this	established as an error in that source
The mechanism is subvisual high cirrus from El Niño	established
The practice has run for more than four hundred years	established as reported
The Aztec material survives through conquest-era compilers	established
The Andean observation attached itself to the feast of San Juan	established

NEAR-TRUTHS

- **Three names, three worlds.** A snake's warning, a market square and a grain store. One cluster, and not one of them is a person.
- **The marketplace is a Gathered Together name.** A tianquiztli is many small things crowded into one place, which is the same perception as Subaru, in the language of trade.
- **The most exacting observation in the study was made by people who thought the world depended on it.** Midnight, zenith, once in 52 years, with every fire out.
- **And the most useful was made by people who just wanted to know about the rain**, and it was right.
- **The granary in the sky has the same name as the granaries on the ground.** The Inca put the word for their food stores on the stars that told them whether the stores would fill.

THREE ILLUMINATIONS

The First: The Andes Made It an Instrument

Ten rungs of this study have shown people using this cluster as a clock: when it rises, when it sets, when it stands overhead, when it vanishes. Six distinct events, all of them answering the question *when*.

The Andes asked a different question. Not when the cluster appears, but **how well it can be seen** when it does.

Brightness, apparent size, date of first appearance, position of the brightest star [328]. Four judgements, none of them about time, all of them about the state of the air.

And it works, because a faint compact cluster viewed low through maximum atmosphere is a sensitive detector of high cirrus, and El Niño makes high cirrus, and El Niño kills the Andean rains eight months later [339, 336].

This is the only case in the entire study of a people using this cluster as a **measuring instrument rather than a calendar**, and it is the only Pleiades practice ever published in *Nature* [341].

Grade: established, and it is the most remarkable single use of this cluster that humanity has found.

The Second: Four Peoples Found the Culmination, and the Hardest Version Is Here

China, the eastern woodlands, southern Africa, and now the Aztecs. Three continents, both hemispheres, no contact.

And the Aztec version shows what the technique is capable of at its limit. Not a season marker. A single moment: a specific cluster crossing a specific point at the exact middle of a specific night, once in fifty-two years, watched from a hill by a city that had put out every fire it owned.

They could do it because Tenochtitlan sits at nineteen degrees north and the cluster's declination is twenty-four, so it passes near enough to the zenith to be judged against a structure.

The technique is universal; the precision available depends on the latitude. That is the whole study's geometry in one line.

Grade: supported, now on four cases.

The Third: Five Ways a Pleiades Calendar Ends, and the Last One Is Survival

The ladder has now found five distinct mechanisms by which a stellar reckoning gives way:

Mechanism	Where	What happened
Precession	India	the equinox left Krittika; the list was re-headed
Prophetic reform	Haudenosaunee	Handsome Lake fixed it to the January new moon
Timetable	Xhosa	initiation moved to the December school holidays
Empire	Amazigh	the Julian calendar arrived with Rome and stayed
Syncretism	**the Andes**	**the observation attached itself to the feast of San Juan and survived**

The first four are losses. **The fifth is not.**

The Andean farmers did not abandon the cluster when the Church arrived. They kept the observation, kept the week, kept the four judgements, and let the date be called San Juan. Four centuries later the practice was intact enough to be studied, and it turned out to be a working climate forecast.

A tradition that borrows the conqueror's calendar can outlive one that defends its own.

Grade: supported.

> ✦ Practice: how clear is it Breathe in and look at something faint and far off. Soft pause of two counts. Breathe out and ask not what time it is, but how clear the air is between you and it. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER ELEVEN

Held and strengthened: - The calendar is the constant. Eleven for eleven. - No missing star. Five for five among the traditions that never counted. - The Gathered Together family: Tianquiztli, the marketplace, joins as a crowd-name. - Thompson's seven-sisters claim: still two of eleven.

New after the Americas: - **The Andes use the cluster as an instrument, not a clock**, and the method was verified in *Nature* in 2000. - **A fourth independent instance of the culmination rule**, and the most exacting observation in the study. - A fifth mechanism in the life of a Pleiades calendar, and the only one that is survival rather than loss. - The Plains Devils Tower tradition is the only American case with both women and a pursuer, and its pursuer is a bear in a region where the Bear and the Pleiades are never named together.

Next rung: Māori and Polynesia, which counts nine, which recovered two lost stars from manuscripts in the present generation, and which made this cluster a national holiday.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The Aztec material comes through sixteenth-century Spanish compilers, chiefly Sahagún, read here in secondary transmission rather than from the Nahuatl. The Maya identification rests on Milbrath, cited at second hand. The Andean material is the best-sourced in the whole study, resting on a peer-reviewed *Nature* paper and its authors' own popular accounts. One error in a secondary source, reversing the direction of the brightness forecast, is identified and corrected in the geometry section. The author reads everything and decides what goes on the page.

Māori and Polynesia · The Little Eyes, and the Feeding of the Stars

Why Polynesia is the twelfth rung

Eleven rungs are up. The calendar is eleven for eleven. The culmination rule has been independently discovered four times. Thompson's claim that the cluster is nearly always seven sisters stands at two for eleven. The Andes turned it into an instrument and had the result published in *Nature*.

Polynesia is the twelfth rung for three reasons, and each of them tests something different.

It breaks the count. The Māori tradition, as recovered from manuscript, holds **nine**, and the composition of those nine is not what anyone expects.

It is one language family spread across both hemispheres, which makes it a second controlled experiment: the same people, the same word, the same cluster, and two different sky events chosen for two different latitudes.

And it is the only tradition in this entire study that feeds the stars. Not offers to a god associated with them. Feeds them, by name, in an oven, with the food each one governs.

THE THIRTEEN BREATHS

Breath 1. Sky

Polynesia is the widest latitude spread of any tradition in this study: Hawai'i at about 20 degrees north, Tahiti at 17 south, Rapa Nui at 27 south, Aotearoa at 37 to 46 south.

And the cluster's behaviour changes across that span, which is the whole content of Breath 8. In Hawai'i and Tahiti the usable event is the **evening rising** in November. In Aotearoa it is the **dawn rising** in midwinter June.

One cluster, one language family, two hemispheres, two different events.

Grade: established.

Breath 2. Name

The word *matariki* or something close to it, referring to the Pleiades, is found in many Polynesian languages [344].

Place	Name
Aotearoa	Matariki [344]
Hawai'i	Makali'i [345, 346]
Tahiti	Matari'i [344]
Rapa Nui	Matariki

Two readings are given for the Māori word: **mata ariki**, the eyes of god, and **mata riki**, the little eyes.

And two further Māori terms for the cluster as a whole are recorded, both of which belong in a family this study has been building for twelve rungs:

Te Tautari-nui-o-Matariki, Matariki fixed in the heavens, and **Te Huihui o Matariki**, **the assembly of Matariki** [347].

The assembly. A gathering, a coming-together, a crowd convened.

That is Subaru, MUL.MUL, Tagemmunt, Kimah, al-Thurayya, !Khunuseti, //xwhai, nyokoaro, the Sieve, Ülker, Mao-linked-to-Liu, and Tianquiztli the marketplace. Thirteen traditions now, on six continents and the Pacific, naming this cluster for the fact that it is a gathering.

Grades. That matariki and its cognates are widespread in Polynesian languages: established. That Te Huihui o Matariki means the assembly of Matariki: established as recorded.

Breath 3. Form

A mother and eight children, five girls and three boys

This is the finding, and it dismantles the seven-sisters reading from inside a tradition that is often cited to support it.

The manuscript of **Rāwiri Te Kōkau**, passed to Rangi Mātāmua, recognises nine stars in Matariki, adding Pōhutukawa and Hiwa-i-te-Rangi to make a total of **eight children, five of which were female and three male** [348].

So: Matariki is the mother, and her eight children are **mixed**. Five daughters and three sons.

Not seven sisters. Not sisters at all, exactly: a family, of both sexes, with a parent.

And the origin account is not about women at all. Tāwhirimātea, the god of wind, was so angered when his parents Ranginui the sky father and Papatūānuku the earth mother were separated that he tore out his eyes and threw them into the sky, and they became Matariki.

The cluster is a god's torn-out eyes, which then became a mother and eight children.

Grades. That Te Kōkau's manuscript gives nine stars, eight children, five female and three male: established as reported from Mātāmua's published work. That the origin account is Tāwhirimātea's eyes: established.

Breath 4. Number

Nine, and every one of them has a job

Star	Western name	Domain
Matariki	Alcyone	wellbeing, health, reflection [348, 349]
Pōhutukawa		those who have died [349, 350]
Tupu-ā-nuku	Pleione	food that grows in the soil [348, 349]
Tupu-ā-rangi	Atlas	food that comes from above [348, 349]
Waitī		fresh water [349]
Waitā		salt water [349]
Waipuna-ā-rangi	Electra	rainwater [348, 349]
Ururangi		the winds [349]
Hiwa-i-te-rangi	Celaeno	growth and prosperity; the wishing star [348, 349]

Hiwa-i-te-rangi is the youngest of Matariki's children and was considered the wishing star, on which Māori would rest their hopes [348].

Why some iwi count seven and others nine

The published explanation is physical. The two additional stars, **Pōhutukawa and Hiwa-i-te-rangi, are often harder to distinguish without optimal atmospheric conditions or keen eyesight** [351].

And the difference is not just arithmetic. The seven-star model focuses primarily on food and weather; the nine-star model incorporates **death** through Pōhutukawa and **aspiration** through Hiwa-i-te-rangi [351].

So the two stars that are hardest to see are the two that carry the dead and the future. Lose them and you have a farming almanac. Keep them and you have a theology.

What this does to the six-versus-seven question

Twelve rungs, and here is a tradition that says **nine**, names every one, gives each a department, and explains the disagreement by eyesight and sky conditions.

The hundred-thousand-year proposal rests on the claim that peoples say seven while seeing six. **Māori say nine and see seven**, which is the same phenomenon with the numbers moved up and which has nothing to do with a lost sister.

And it is the only tradition in this study where the count is openly and currently contested **inside** the culture, with the physical reason stated.

Grades. That the nine stars and their domains are as listed: established on Mātāmua's published work and its transmission. That the two extra stars are harder to see without keen eyesight and good conditions: established as reported. That the seven-star model is food and weather and the nine-star model adds death and aspiration: established as reported.

Breath 5. Story

The Tāwhirimātea account, treated in Breath 3, and after that the tradition is overwhelmingly **ceremonial rather than narrative**.

What Polynesia has instead of a plot is a **season**. In Hawai'i the rising of Makali'i opens Makahiki, four lunar months of peace, harvest and tribute [346, 352]. In Tahiti the year is divided into two

halves by whether the cluster is visible after sunset: **Matari'i i nia**, Matari'i above, and **Matari'i i raro**, Matari'i below [344].

The Tahitian case deserves a line of its own. **A whole calendar of two seasons, defined entirely by whether this one cluster is in the evening sky.** No other people in this study divides the year with nothing but the Pleiades.

Grades. That Makahiki is opened by the rising of Makali'i: established. That the Tahitian year is divided by Matari'i i nia and i raro: established.

Breath 6. Missing

Nothing , and something better.

Polynesia has no lost-sister motif. What it has instead is **two stars that were genuinely lost and then found again**, and this study has not found that anywhere else.

Pōhutukawa and Hiwa-i-te-rangi were not in general circulation. They were recovered from the manuscript of Rāwiri Te Kōkau and brought back into public knowledge by Rangi Mātāmua, and in 2016 Te Wānanga o Aotearoa promoted the nine-star reading in a month-long roadshow called **Te Iwa o Matariki**, *iwa* being Māori for nine [353].

So where Greece invented three stories to explain a star that was never there, Māori scholarship located two stars that really were missing, in a document, and put them back.

That is the exact inverse of a lost-Pleiad motif, and it happened in the last ten years.

Grades. That Pōhutukawa and Hiwa-i-te-rangi were recovered from Te Kōkau's manuscript through Mātāmua's work: established. That Te Iwa o Matariki was promoted in 2016: established.

Breath 7. Pursuit

None. No hunter, no sorcerer, no bear, no abduction, no chase.

The cluster is a family with a mother, and nothing is coming for them.

Which is worth recording plainly, because Polynesia is routinely cited in the popular literature alongside Greece and Australia as a seven-sisters tradition. It is not one. It has no sisters, no seven and no pursuer.

Grade: established as an absence.

Breath 8. Year

One language family, two hemispheres, two different events

This is the second controlled experiment in the study, after the Khoe-and-Bantu comparison in Deep Pass Nine, and it is cleaner.

Hawai'i, about 20 degrees north. Beginning in late October or early November, when the cluster is first observed **rising above the horizon at sunset**, the Makahiki period continues for four months, through the time of rough seas, high winds, storms and heavy rains [352]. The rising of Makali'i at sunset marks the beginning of the Hawaiian new year [346]. One source gives the date as 20 November [344].

Tahiti, about 17 degrees south. The year divided in two by whether the cluster is visible after sunset [344].

Aotearoa, about 37 to 46 degrees south. The **heliacal rising**, the pre-dawn appearance in midwinter June, signals the new year, with the date set within the Tangaroa lunar period [354].

Place	Latitude	Event used	Season
Hawai'i	20° N	**evening rising**	late October to November
Tahiti	17° S	**evening visibility**, dividing the year	two halves
Aotearoa	37° to 46° S	**dawn rising**	midwinter June

Same word, same people, same cluster, different event.

The reason is latitude and season. Hawai'i needed a marker for the onset of the wet and stormy season, which the evening rising gives in November. Aotearoa, far south and temperate, needed a midwinter year-turn, which the dawn rising gives in June. The cluster offers six usable events and the Polynesian navigators, moving across sixty degrees of latitude, took whichever one their new home made available.

This is the clearest demonstration in the study of the principle that has been building since Deep Pass Five: the function is constant, and the event is chosen locally. And here it is done by one people, carrying one word, in living memory of their own migrations.

Grades. That Hawai'i uses the evening rising to open Makahiki: established. That Tahiti divides the year by evening visibility: established. That Aotearoa uses the dawn rising: established. That the difference follows latitude and local season: supported.

Breath 9. Rite

The only people in the world who feed the stars

Twelve rungs. Temples in Assyria, lamps on Arunachala, a nine-day Feather Dance, coals cast at the rising, a hilltop sacrifice at midnight, a pilgrimage to a snowfield.

Nobody else feeds the cluster itself, by name, with the food it governs.

The Māori **hautapu** is a ceremony performed at Matariki to feed the stars [355]. An oven is prepared, and the contents correspond to the domains of the stars: **birds for Tupu-ā-rangi, root vegetables for Tupu-ā-nuku** [349]. It is believed that the stars of Matariki descend to dine on the essence of the food, and this is an act of **reciprocity**: the people feed the stars, and in return the stars provide the energy for the new year [355].

And the ceremony has three parts, each tied to a different star's department.

The forecast. The ceremony involved viewing the individual stars for forecasts of the year to come [356]. Each star's brightness is read for its own domain: the fresh-water star for the rivers, the salt-water star for the sea, the rain star for the rain.

The remembrance. After the forecasts for the year had been read from the stars, the deceased were invoked with tears and song in a ceremony called **te taki mōteatea**, the reciting of laments [353]. The names of those who have died since the last rising of Matariki are called out, as a final farewell, sending their spirits into the sky to become stars, the *kāhui whetū* [355].

And the feeding. The offering of food to replenish the stars [356].

Read the forecast part against the Andes

Deep Pass Eleven's central finding was that the Andes use this cluster as a photometric instrument, judging brightness to predict the rains eight months out, and that the method was verified in *Nature*.

Māori do the same thing, star by star, and assign each reading to a department. Not the brightness of the cluster but the brightness of each member, each one reporting on its own domain: fresh water, salt water, rain, soil crops, tree crops, wind.

That is the Andean technique, generalised into nine separate forecasts.

Whether it works is a question nobody appears to have asked. **It is testable by exactly the method Orlove, Chiang and Cane used**, and it is the most obvious piece of unfinished science this study has turned up.

Grades. That the hautapu feeds the stars with food matching their domains: established as reported in the tradition. That the ceremony includes star-by-star forecasting, the reciting of laments and a food offering: established. That the star-by-star forecast has been tested: **not supported**; no test found.

Breath 10. Land

A nation.

Matariki was first observed as a **public holiday** in New Zealand on 24 June 2022, including a pre-dawn live broadcast of a hautapu ceremony [357]. It was enacted as **Te Kāhui o Matariki Public Holiday Act 2022**, and the date moves each year within the Tangaroa lunar period [354].

Jacinda Ardern pledged on 7 September 2020 to make Matariki a public holiday if Labour were re-elected [353], and the academic work underpinning it was Mātāmua's: his scholarship challenged the simplified Seven Sisters narrative, reintroduced the nine-star cluster to the general public, and provided the foundation for the government's declaration [358].

So this is the only case in the study of a Pleiades tradition becoming the law of a country, and it happened four years ago, on the strength of a recovered manuscript.

Grades. That Matariki became a New Zealand public holiday on 24 June 2022 under the 2022 Act: established. That Mātāmua's scholarship was the foundation: established as reported.

Breath 11. Word

Carried by **navigation, oral genealogy, one manuscript, and then a statute.**

The Polynesian expansion carried the word across sixty degrees of latitude and a third of the planet's circumference, in canoes, with the cluster itself among the navigational stars.

Then the knowledge contracted. For decades the celebration of Matariki was maintained largely by iwi and hapū [359], and the nine-star reading survived in ancient manuscripts and in the teachings of particular whare wānanga, especially from the Tūhoe and Tainui regions [351].

Then it was recovered: a single manuscript, by Rāwiri Te Kōkau, reaching Rangi Mātāmua [348].

Then a roadshow in 2016 [353], then a public holiday in 2022 [357].

Navigation, to oral tradition, to a book in a family, to a scholar, to a nation. No other rung in this study has that trajectory, and all of it is documented.

Grade: established.

Breath 12. Wound

Colonisation, and the narrowing of the count, and then the only full recovery in the study.

The Māori knowledge of this cluster contracted under colonisation to the point where two of its nine stars dropped out of general circulation. The seven-star model that remained is the one that **matches the European Seven Sisters**, which is unlikely to be a coincidence and which the study should flag: a nine-star indigenous tradition and a seven-star settler tradition converged on seven.

And Colenso's note from the far north in 1839, recorded in Deep Pass Nine, belongs here too: where he could see six stars clearly, Māori could see seven and sometimes eight.

Then the recovery. The manuscript, the scholarship, the roadshow, the Act.

This is the sixth and best mechanism in the life of a Pleiades calendar. India lost it to precession, the Haudenosaunee to a prophet, the Xhosa to a school timetable, the Amazigh to

Rome, the Andes survived by syncretism. **Aotearoa recovered it from a document and legislated it.**

Grades. That the nine-star reading survived in manuscripts and particular whare wānanga while the seven-star model prevailed publicly: established as reported. That the recovery proceeded from manuscript to scholarship to statute: established.

Breath 13. Return

What does Polynesia say the cluster is for?

For remembering the dead, feeding the living, and asking for something.

Pōhutukawa carries those who have gone, and their names are called into the sky. Tupu-ā-nuku and Tupu-ā-rangi carry the food from the soil and from the trees, and the oven is filled accordingly. And Hiwa-i-te-rangi, the youngest and the faintest, is the wishing star, on which hopes are rested [348].

The dead, the harvest, and the wish. In that order, in one night.

Grade: established as the tradition gives it.

WHAT WAS SEEN

Nine stars, each with a department: health, the dead, soil food, tree food, fresh water, salt water, rain, wind, and hope. A ceremony at dawn in midwinter where the names of the year's dead are called into the sky, the stars are read one by one for the year ahead, and an oven of food is opened so the stars can come down and eat. And since 2022, a public holiday.

WHAT WAS UNSEEN

That this is not a seven-sisters tradition and never was.

Nine stars, not seven. A mother and **eight children, five female and three male**. A god's torn-out eyes. No pursuer, no lost sister, and a count that is contested inside the culture for a stated physical reason: the two faintest stars need good air and good eyes.

And that the two stars hardest to see are the two that carry the dead and the future. Drop them and you have an almanac. Keep them and you have a religion.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Latitude range of Polynesia	20° N to 46° S	sixty-six degrees, the widest in the study
Hawai'i	about 20° N	**evening rising**, late Oct to Nov [352]
Tahiti	about 17° S	**evening visibility**, dividing the year in two [344]
Aotearoa	about 37° to 46° S	**dawn rising**, midwinter June
Date-setting in Aotearoa	within the Tangaroa lunar period [354]	a lunisolar rule, as in Babylon, India and the woodlands
Stars counted	**nine** [348]	Matariki plus eight children
The two faint ones	Pōhutukawa and Hiwa-i-te-rangi	need optimal conditions or keen eyesight [351]
Colenso, 1839	six for him, seven and sometimes eight for Māori	the eyesight question, from this region

The geometric point

The two stars at the edge of visibility are the two that carry the meaning.

This is the eyesight question in its most consequential form anywhere in the study, and it is not about six versus seven at all.

Pōhutukawa and Hiwa-i-te-rangi sit at the limit of naked-eye resolution in this cluster. Under poor conditions or with ordinary eyes they are not there. Under dark skies with practised eyes they are.

And the tradition is explicit that the **content** of Matariki depends on whether you can see them: without them it is food and weather; with them it is the dead and the future [351].

So a cultural difference in what the new year means turns on an observer's threshold. That is the clearest instance in the whole study of the physical limits of vision shaping the content of a tradition, and it is documented, recent and internal to the culture rather than reconstructed from outside.

And it sits beside Colenso's 1839 note from the same country: six for the European, seven and sometimes eight for Māori.

THE LEDGER

Claim	Grade
Matariki and its cognates are widespread in Polynesian languages	established
Te Huihui o Matariki means the assembly of Matariki	established
Te Kōkau's manuscript gives nine stars: a mother and eight children, five female and three male	established as reported from Mātāmua
The origin account is Tāwhirimātea's torn-out eyes	established
The nine stars and their domains are as listed	established
The two extra stars need optimal conditions or keen eyesight	established as reported
The seven-star model is food and weather; the nine-star adds death and aspiration	established as reported
Pōhutukawa and Hiwa-i-te-rangi were recovered from manuscript through Mātāmua's work	established
Te Iwa o Matariki was promoted in 2016	established
There is no pursuit motif and no lost sister	established
Hawai'i uses the evening rising to open Makahiki	established
Tahiti divides the year by evening visibility	established
Aotearoa uses the dawn rising, dated within the Tangaroa period	established
The difference between them follows latitude and local season	supported
The hautapu feeds the stars with food matching their domains	established as reported
The ceremony includes star-by-star forecasting, te taki mōteatea, and a food offering	established
The star-by-star forecast has been tested	**not supported**; no test found, and it is testable
Matariki became a public holiday on 24 June 2022 under the 2022 Act	established
Mātāmua's scholarship was the foundation for the holiday	established as reported
The seven-star model's agreement with the European Seven Sisters is coincidental	**open**, and worth asking

NEAR-TRUTHS

- **Nine, not seven, and mixed.** Five daughters and three sons and their mother. The tradition most often cited beside Greece turns out not to be a sisters tradition at all.
- **The assembly.** Te Huihui o Matariki joins the Gathered Together family, which now stands at thirteen traditions.
- **Two stars really were lost, and really were found.** From a manuscript, in the last ten years, by a named scholar, and the finding became a national holiday.
- **The faintest stars carry the heaviest meaning.** Death and hope sit exactly at the threshold of what an eye can resolve.
- **And they feed them.** Of every people in this study, one holds that the stars come down to eat, and cooks for each of them what it governs.

THREE ILLUMINATIONS

The First: One People, Two Hemispheres, Two Events

Deep Pass Nine put two unrelated peoples under one sky and found their names agreeing. This rung does the reverse and is stronger for it: **one people, one word, spread across sixty-six degrees of latitude, choosing different sky events.**

Hawai'i at 20 north takes the evening rising in November and opens four months of peace and harvest. Aotearoa at 40 south takes the dawn rising in midwinter June. Tahiti splits the whole year in two by whether the cluster shows after sunset.

Same cluster. Same ancestors. Same name. **Different event, because the latitude and the local season demanded a different one.**

This is the principle the ladder has been assembling since Deep Pass Five, demonstrated by a single migrating people within their own documented history. The function is constant. The event is chosen locally. **The story, where there is one, comes last and is the most local thing of all.**

Grade: supported, and this is the cleanest demonstration of the principle in the study.

The Second: The Threshold of the Eye Decides What the Year Means

The Māori count is contested inside the culture, and the published reason is physical: Pōhutukawa and Hiwa-i-te-rangi are harder to distinguish without optimal atmospheric conditions or keen eyesight [351].

And the consequence is not arithmetic but theological. **Seven stars gives you a tradition about food and weather. Nine gives you one that also holds the dead and the future** [351].

So in this one case we can see exactly what the eyesight question does to a culture, and it has nothing to do with a lost sister. It does not generate a myth of absence. **It generates two versions of a religion**, one thinner than the other, divided by the threshold of an eye.

Set beside Colenso's note from the same islands in 1839 and Norris's flat statement that no eyesight could produce seven, this is the single most useful case the study has for the eyesight question, and it is the one nobody in that debate has used.

Grade: established as the tradition's own explanation; the inference is supported.

The Third: A Tradition Can Be Recovered, and This One Was

The ladder has found five ways a Pleiades reckoning ends: precession, prophetic reform, a school timetable, an empire's calendar, and survival by syncretism.

Aotearoa provides the sixth, and it is the only one that runs the other way.

Two stars dropped out of public knowledge. They survived in manuscripts and in the teaching of particular whare wānanga [351]. One manuscript, Rāwiri Te Kōkau's, reached one scholar, Rangi Mātāmua [348]. The nine-star reading was promoted publicly in 2016 [353]. A Prime Minister pledged a holiday in 2020 [353]. The Act passed, and on 24 June 2022 the country stopped work and a hautapu ceremony was broadcast before dawn [357].

A Pleiades tradition went from a document in a family to the statute book of a nation in under a decade.

Nothing else in this study comes close, and it is worth saying plainly what it demonstrates: **these traditions are not relics.** One of them is currently the law.

Grade: established.

> ✦ Practice: the nine Breathe in and name something that has gone. Soft pause of two counts. Breathe out and name something you are hoping for. Those are the two faintest stars, and they are the ones that matter. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER TWELVE

Held and strengthened: - The calendar is the constant. Twelve for twelve. - The function is constant and the event is chosen locally, now demonstrated by one people across two hemispheres. - No missing star. Six for six among the traditions that never counted. - The Gathered Together family: Te Huihui o Matariki, the assembly, joins. Thirteen traditions. - Thompson's seven-sisters claim: still two of twelve, and Polynesia is removed from the list it is usually cited on.

New after Polynesia: - **Nine stars, a mother and eight children, five female and three male.** - The two faintest stars carry the dead and the future, so the threshold of the eye decides what the year means. - The only people who feed the stars, by name, with the food each governs. - A star-by-star brightness forecast that mirrors the Andean method and **has never been tested**. - A sixth mechanism: full recovery, from manuscript to statute, in under a decade.

Next and last: The Gathered Together. Thirteen traditions on six continents who looked at this cluster and named it for nothing but the fact that it is a gathering. It is the finding the whole ladder has been assembling, and it belongs at the end.

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. The Māori material rests on Rangi Mātāmua's published scholarship as transmitted through reference and community sources, not on Te Kōkau's manuscript itself. The nine-star reading is a living and contested matter within Māori scholarship and among iwi, and this pass reports the published position without adjudicating between iwi traditions. The suggestion in Breath 9 that the star-by-star forecast is testable is this study's own, offered as a question and not a claim. The author reads everything and decides what goes on the page.

The Gathered Together

Why this is the last rung

Twelve rungs are up, and they were all peoples. This one is not.

This rung is a **name**, and it belongs to nobody in particular. It turned up in Japan, and then in Sumer, and then in the Hebrew Bible, and then among the Tuareg, and then in the Kalahari, and then on the Turkic steppe, and then in the Amazon, and then in Belarus, and then in China, and then in Tenochtitlan, and then in Aotearoa, and in the end it turned out to be sitting underneath the Greek word as well.

Fourteen unconnected traditions, on six continents and across the Pacific, looked at this cluster and called it, in their own languages, **a gathering**.

Not sisters. Not seven. Not a lost one. A heap, a crowd, a bunch, a group, an assembly, a marketplace, a deployment of troops, the Stars.

This is the finding the whole ladder has been assembling without meaning to, and it belongs at the end.

THE THIRTEEN BREATHS

Breath 1. Sky

Every rung in this study has begun by asking what a particular people actually saw from a particular latitude.

This one begins by asking what **everybody** sees, from everywhere.

And the answer is small. The cluster subtends about two degrees, four times the apparent width of the full moon, and holds six or seven stars that an ordinary eye can separate, inside a faint haze that most people never notice at all.

From the Arctic to the Kalahari, from the Andes at four thousand metres to the Nile delta, from Boeotia to the Sulu Sea, that is the same. **It is the only object in the sky that is unmistakably**

many things in one place. Orion is a shape. The Bear is a shape. The Milky Way is a river. The Pleiades is a **quantity**.

Grade: established as astronomy.

Breath 2. Name

The family, assembled

Tradition	Name	What it means
Sumerian and Akkadian	**MUL.MUL**	the Stars, the Star of Stars, Many Stars
Japanese	**Subaru**	gathered together, united
Turkic: Turkish, Kazakh, Kirghiz, Tuvan	**Ülker, Ürker**	an army made up of detachments
Tatar and Bashkir	**Ölkär**	the same word [360]
Sakha, Yakut	**Ürgel**	the same word, with metathesis [360]
Hebrew	**Kimah**	a cluster, or a heap [361]
Aramaic and Syriac	**keemta, keema**	the same root [360]
Arabic	**al-Thurayya**; cognate **kom**	a cluster; a group, heap or herd of camels [360]
Amazigh	**Tagemmunt**	the group
Khoikhoi and Nama	**!Khunuseti**	to gather together
San: !Ko, !Kung, /Gwi, /Xam	**!xwe, xwedzi, //xwhai**	a crowded bunch of stars; a group of small stars
Barasana, Amazonia	**nyokoaro**	the Star Thing
Belarusian, Polish and Slavic dialects	**Kupa, Hramadka, Gromadka**	a heap; a heap of stars [362]
Chinese	**Mao**, linked to **Liu**	implying a clustering of stars
Nahuatl	**Tianquiztli**	the marketplace
Māori	**Te Huihui o Matariki**	the assembly of Matariki
Greek	**Pleiades**, on the *pleios* reading	full, many; from the root meaning to fill [363]

And one tradition that belongs here by going further than any of them. **The Bantu peoples did not name the stars at all.** Across forty languages from Zanzibar to the Cape, the name is a verb meaning to cultivate. They looked at the gathering and named only what you do when it arrives.

How to read this table

Six continents. At least nine unrelated language families: Afroasiatic, Sino-Tibetan, Japonic, Turkic, Indo-European, Khoe, Tuu, Tucanoan, Uto-Aztecan, Austronesian, Niger-Congo.

No contact between most of them. No common ancestor within any reachable depth. And the same perception, expressed in whatever each language had to hand: a military formation on the steppe, a market square in Mexico, a herd of camels in Arabia, a heap of grain in Belarus, an assembly in Aotearoa.

This is the largest convergence in the study by an enormous margin. The calendar is universal, but the calendar is a *use*. This is a universal **perception**, and it is prior to use.

Grades. That each of these names means what is given: established, source by source, across twelve previous passes. That they constitute a convergence rather than a diffusion: supported, on the absence of any plausible route between most of them.

Breath 3. Form

None. That is the whole point of this breath.

Every other rung in this ladder gave the cluster a form. Seven armed gods. Seven boys. Six foster-mothers. A tiger's mane. A bull's bristle. A rattlesnake's rattle. A granary. Daughters of the night. The wives of Aldebaran. A mother and eight children.

The Gathered Together names give it **no form whatsoever**. They are not even nouns about things. Subaru is a verb's participle. !Khunuseti is an infinitive. The Bantu name is a verb with a class prefix. Ülker is a tactic.

These are the only names in the study that describe what the cluster is doing rather than what it is.

Grade: established.

Breath 4. Number

None, in a single one of them.

Not six, not seven, not nine, not eleven. Fourteen traditions, and no numeral.

This is the finding that disposes of the question the study started with. **The six-versus-seven anomaly cannot exist in a tradition that never counts**, and the largest single family of Pleiades names on Earth never counts.

Across thirteen rungs the correlation is now complete and without exception:

Does the tradition commit to a number?	Does it have a missing member?
Greece: seven	yes, three different explanations
India: seven wives	yes, Arundhati relocated
Eastern woodlands: seven boys	yes, a pine tree and a falling star
The steppe: seven men of the Bear	yes, a stolen girl
Mainland Australia: seven sisters, sometimes	sometimes
Mesopotamia: seven, from the number system	**no**
China: seven, not at issue	**no**
Torres Strait: six	**no**
Māori: nine	**no**
The Gathered Together: no number	**no**

No count, no lost sister. Thirteen rungs, no exceptions.

Grade: established as the distribution; the inference is established.

Breath 5. Story

None attaches to the name itself.

Some of these peoples have stories. The Khoikhoi have the fullest Pleiades narrative in Africa. Mesopotamia has the Sebettu. Māori have Tāwhirimātea's eyes.

But none of those stories is in the name. The Khoikhoi story is about a hunter and his wives; the word is *to gather together*. Mesopotamia's seven gods are armed warriors; the word is *the Stars*. Māori have a mother and eight children; one of their words for the whole is *the assembly*.

The story sits on the name and does not change it. That is the ladder's central finding, and this breath is where it is simply visible rather than argued.

Grade: established.

Breath 6. Missing

None, in any of the fourteen.

See Breath 4. There is nothing to be missing from a heap.

Grade: established.

Breath 7. Pursuit

None in the names.

Four of these peoples pair the cluster with another object: the Khoikhoi with Aldebaran, Mesopotamia with the Bull, China with the Tiger, the steppe with the Bear. In every case the pairing lives in the story or the system, not in the word.

A heap is not chased by anything.

Grade: established.

Breath 8. Year

And here is the one thing that does attach to the name, in every single case.

Thirteen rungs, and the calendar column is full for the thirteenth time. Every tradition in this family uses the cluster to tell the time:

Tradition	What the gathering says
Mesopotamia	insert the thirteenth month when the moon and the cluster fall out of balance
China	Mao overhead at dusk means midwinter
Japan	the inherited mansion system
The steppe	the cold is coming
Hebrew and Arabic	the agricultural and lunar reckonings
Amazigh	thirst at one end of the year, cold at the other
Khoikhoi	the rains are near and the year begins
San	summer's things
Barasana	the beginning of the New Path
Belarus	**the Sieve rose higher, it is midnight, the cocks will crow** [362]
Aztec	the world continues for another fifty-two years
Māori	the new year, with nine forecasts
Bantu	begin to dig

The Belarusian line is worth keeping because it is the whole study in one sentence of peasant speech. A heap of stars, to determine the time [362].

Grade: established.

Breath 9. Rite

This breath has no single answer, and the variety is the point.

The same perception, under the same name-family, carries: temples at Nineveh, a lamp on a hill in Tamil Nadu, an oven of birds and root vegetables at dawn in Aotearoa, a captive opened at midnight outside Tenochtitlan, a mother lifting a child in Namaqualand, and in most of the rest, nothing at all.

The name is constant and the ceremony is anything. Which is the same relation the study found between function and story, one layer up.

Grade: established as the distribution.

Breath 10. Land

Everywhere.

Six continents and the Pacific. The only object in this study that has no home.

Grade: established.

Breath 11. Word

Carried by ordinary speech, which is why it survived

This is the structural reason the Gathered Together family is the largest in the study, and it took thirteen rungs to see it.

A story needs a teller, an occasion and someone who thinks it is worth passing on. A songline needs standing. A liturgy needs a priest. An archive needs a scribe and a surviving library.

A name needs nothing. It is transmitted by children learning to talk. It survives conquest, conversion, literacy, illiteracy, migration and collapse, because nobody has to decide to preserve it.

So the layer of this tradition that is **most widely shared is also the layer that was cheapest to keep**, and that is not a coincidence. It is a selection effect operating across the whole species.

And it cuts the other way too. The stories we have are the ones somebody wrote down, usually a stranger, usually recently, usually a European. **The names are what the people themselves kept.**

Grade: supported, as this study's own inference.

Breath 12. Wound

The wound of this rung is the English language

Twelve rungs have recorded wounds: removal, genocide, conquest, extinction, precession, reform, syncretism, a school timetable.

This one's wound is a translation.

Of all the names in the table above, not one contains a number and not one contains a sister. The specialist encyclopaedia makes the point exactly: the number seven has never been part of the name of this cluster in any language, unlike modern English.

Seven Sisters is an English phrase. It came from Greek, and in Greek it sits on top of a word that probably meant the sailing stars. And it was the phrase in the heads of almost every person who ever wrote down anyone else's Pleiades tradition.

Stith Thompson's line, that the constellation was nearly always imagined as a group of seven sisters and that the myths explain why there are only six, is the scholarly form of the same wound. This study tested it and found it at two of twelve.

The Gathered Together family is what you see when you take the English name off.

Grade: established.

Breath 13. Return

What does this family say the cluster is for?

For noticing that there are many of something in one place, and that it has come back.

A heap. A crowd. A market. An assembly. Many stars. A crowded bunch of small stars. And then: now dig, now insert a month, now carry water, now expect the cold, now light the lamp, now feed them, now the cocks will crow.

Grade: established.

WHAT WAS SEEN

Fourteen traditions, six continents, at least nine language families, and one perception: this is a gathering.

A heap in Hebrew, Aramaic, Syriac and Belarusian. A herd of camels in Arabic. The Stars in Sumerian. A group in Amazigh. To gather together in Khoikhoi. A crowded bunch of small stars in the Kalahari. An army of detachments on the steppe. The Star Thing in the Amazon. A clustering in Chinese. A marketplace in Nahuatl. An assembly in Māori. Gathered together in Japanese. And, underneath the sisters, full and many in Greek.

WHAT WAS UNSEEN

That this was there all along, and that the study spent its first ten rungs looking past it.

The first gather had Subaru as a one-line curiosity in the shortest breath of thirteen. It took a correction from outside to notice that Subaru was not alone, and then twelve more passes to find out how far it went.

The thing every human being actually sees when they look at this cluster is that it is a gathering. Everything else in this study, every sister and every god and every tiger and every granary, is laid on top of that one shared perception by people who needed the sky to say something more specific.

THE GEOMETRY BENEATH

Quantity	Value	What it does
Angular diameter of the cluster	about 2 degrees	four full-moon widths; a patch, not a point
Stars resolvable by an ordinary eye	six or seven	enough to be plural, few enough to be one thing
Brightest member, Alcyone	magnitude 2.9	visible but not dominant; no leader
Spread of member brightness	about 2.9 to 5.0	no single star owns the group
Nearest comparable object	the Hyades, about 5 degrees	larger, looser, reads as a V rather than a knot
Distance from the ecliptic	within about 4 degrees	why the calendar column is full

Why the perception is universal, stated precisely

Three facts of the object make the gathering-reading inevitable, and only this object has all three.

It is plural. Six or seven separable points. A single star cannot be a heap.

It is compact. Two degrees across, so the members are closer to each other than to anything else. The eye groups them before the mind names them. The Hyades, five degrees across and anchored by Aldebaran, does not group the same way: it reads as a shape with a leader.

And it has no leader. The brightest member is magnitude 2.9, bright enough to see and not bright enough to dominate. There is no Aldebaran in the Pleiades, no Betelgeuse, no star the

others are arranged around. So the group cannot be read as one thing with attendants. **It can only be read as many things of comparable standing, together.**

That is exactly what a heap is, and a market, and a crowd, and an assembly, and a herd, and a scattered deployment of troops that supports itself.

Fourteen peoples did not share an ancestor. They shared an object with three properties, and the three properties have one name.

AND THE NEBRA DISC, WHICH BELONGS HERE

Deep Pass Six found that the seven-dots glyph of Mesopotamia, which denotes the Pleiades on boundary stones and seals, was **at first six dots surrounding a central dot** before becoming two rows of three with a finial.

And that is what the Nebra sky disc shows: six gold dots around a seventh, which Norris and Norris themselves note is symmetrical and therefore probably symbolic rather than a literal picture of the cluster.

Read it as a member of this family and it stops being a puzzle.

Six around a centre is not a count and not a portrait. It is **a glyph for a gathering**: the minimum drawable figure that says *many small things around a centre*, and the same figure that a Bronze Age metalworker, a Mesopotamian seal-cutter and a child with a pencil will all produce if asked to draw a cluster.

So the oldest unambiguous European depiction of the Pleiades as seven is probably not evidence that Bronze Age Europeans counted seven stars. It is evidence that they had the same perception as everybody else, and drew it.

Grade: contested, as in Deep Pass Six, and still awaiting a Bronze Age specialist. But it fits.

THE LEDGER

Claim	Grade
Fourteen traditions across at least nine language families name the cluster for its clustering	established, source by source
They constitute convergence rather than diffusion	supported, on the absence of routes between most of them
None of these names contains a form	established
None of these names contains a numeral	established
No count, no missing member: thirteen rungs, no exceptions	established
The story sits on the name and does not change it	established
Every tradition in the family uses the cluster calendrically	established
The name survived because it is carried by ordinary speech	supported, this study's inference
Seven has never been part of the cluster's name in any language but modern English	established
The three properties of the object (plural, compact, leaderless) make the perception inevitable	supported
The Nebra disc's six-around-a-seventh is a glyph of the gathering	**contested**; needs a specialist

NEAR-TRUTHS

- **The smallest breath became the largest.** Subaru was one line in the first gather. It is now the thirteenth rung and the study's main finding.
- **A heap of stars to determine the time.** A Belarusian informant said the whole thesis in eight words, and nobody noticed because it was a peasant saying rather than a myth.
- **The names are the people's; the stories are often the collectors'.** What survived without anyone deciding to save it is the layer that was never anyone's to take.
- **Leaderless is the key property.** The Hyades is just as compact-ish and just as close to the ecliptic, and it has Aldebaran. So it reads as a face, a jaw, a bull. The Pleiades has nobody in charge, so it can only read as a crowd.
- **And six around a seventh is how you draw a crowd**, in bronze or in cuneiform or with a pencil.

THREE ILLUMINATIONS

The First: The Universal Is a Perception, Not a Story

This study began by asking whether the seven sisters are humanity's oldest story. Thirteen rungs later the answer is that they are not a universal story at all; they are a regional one, at two of twelve.

What is universal is something prior to story. Fourteen traditions, nine language families, six continents, and one perception: *that is a gathering*.

It is not inherited, because there is no route between most of them. It is not invented, because nobody had to invent it. **It is received**, in the plain sense: the object has three properties and the eye reports them, and every language then says it with whatever words it has. Troops, camels, a market, a heap of grain, an assembly, the Stars.

Every other layer of this study, every sister and bristle and granary and god, is interpretation laid on top of that.

Grade: established as the distribution; supported as the explanation.

The Second: No Count, No Lost Sister

Thirteen rungs. The correlation is complete and has no exception.

Where a tradition committed to a number larger than the eye reliably resolves, it generated an explanation for the shortfall, and the explanations are all different: shame, mourning, a god's embrace withheld, theft by the Bear's seven, abduction and recovery, a wife relocated to another constellation, a pine tree, a falling star. Eight mechanisms, six traditions, no two alike.

Where a tradition did not commit to a number, it has nothing to explain and explains nothing. **Mesopotamia for two thousand years. China for three thousand. Bantu Africa across a continent. The Khoe and San, who have a full story and still no count. Māori, who say nine. The Torres Strait, who say six and mean it. And the entire Gathered Together family, who say no number at all.**

So the six-versus-seven anomaly, which is the engine of the hundred-thousand-year proposal, is not a worldwide puzzle inherited from deep time. **It is a local arithmetic problem, generated wherever a culture brought a number to the sky, and solved locally, differently, every time.**

Mesopotamia brought its seven from a number system in which seven already meant a complete set. The Cherokee brought their sacred number. The steppe brought the Bear's seven. English brought Greece's.

Nobody got it by counting.

Grade: established. This is the study's principal result.

The Third: What Survives Is What Costs Nothing to Keep

The layer of this tradition that is most widely shared is the **name**, and the name is the cheapest thing in it.

Stories need tellers and occasions. Ceremonies need calendars and authority. Archives need scribes and libraries that do not burn. Songlines need standing and the right to speak. Every one of those can be interrupted, and across twelve rungs this study has watched every one of them be interrupted: by removal, by conquest, by conversion, by a prophet's reform, by a school timetable, by an empire's calendar, by precession, by a house fire in 1959.

A name is carried by children learning to talk. Nobody preserves it. Nobody can take it. It survives because it costs nothing.

So when we find one layer of a worldwide tradition far more widely attested than the others, the first explanation to try is not antiquity. **It is cheapness of transmission.**

And the corollary matters more than the finding. The stories in this study came to us overwhelmingly through outsiders: Mooney in 1887, Hahn in 1881, Bleek and Lloyd from the 1870s, Parker on the Narran River, Beauchamp in 1900, Sahagún after the conquest, Robinson on his Friendly Mission. They are real, and they are a selection, and the selector was usually a man with Hesiod in his head.

The names are what the peoples kept themselves. And what they kept, almost everywhere, was: *a gathering*.

Grade: supported.

> ✦ Practice: the gathering Breathe in and let everything scattered in you be noticed as one. Soft pause of two counts. Breathe out and let it stay many. It is a heap, and a crowd, and an assembly, and none of them is wrong. Breathe gently, and never force or hold the breath.

WHAT THE LADDER HAS AFTER THIRTEEN

The three findings that survived all thirteen rungs:

1. **The calendar is the constant.** Thirteen for thirteen. Every people in this study uses this cluster to tell the time, and the reason is geometric: it lies within four degrees of the ecliptic and is compact enough for six distinct events to be sharp.
2. **The function is older than the story, wherever the layers can be dated or compared.** Greece's sailing name under its sisters. India's equinoctial fire under its wives. The Turkic tactic under the steppe tales. Mesopotamia and China with function and no story at all. The Khoe name meaning *to gather together* under Africa's richest Pleiades narrative.
3. **No count, no lost sister.** Without exception.

And the finding that was invisible until the end:

4. **The universal layer is a perception, not a story: fourteen traditions on six continents called this cluster a gathering.**

What is dead: - The story-and-rite inverse law, proposed at rung one and buried at rung three. - Thompson's claim that the cluster is nearly always seven sisters, at two of twelve. - The hundred-thousand-year proposal, which needs an anomaly that the two largest written records on Earth never felt.

What is open and should be in the study as questions, not answers: - Are the three lunar-station systems related? - Is the Nebra disc a Near Eastern glyph? - Does the Māori star-by-star forecast work, as the Andean one does? - Did collection bias inflate the apparent worldwide incidence of the sisters motif, and by how much?

A note on evidence

This deep pass was prepared with an AI as a gatherer. It is a mirror, not a mind. It introduces almost no new sources, because its content is the twelve passes before it read together; the few new citations fill out the name family. The central claim, that fourteen traditions independently named this cluster for its clustering, is assembled from fourteen separately sourced findings and is only as good as the weakest of them, which is the Amazigh. The geometric explanation in the

geometry section is this study's own and is graded supported, not established. The author reads everything and decides what goes on the page.

PART THREE

What the Thirteen Made Visible

The Silence of Tasmania

People: the palawa

This breath must be handled with more care than any other in the study, and it is given its own, rather than being a footnote to Australia, because what it records is a silence made by people.

What the record says

The specialist reconstruction is Gantevoort, Hamacher and Lischick's study of palawa star knowledge, which works through the ethnohistorical archive and identifies **forty-two accounts of Aboriginal astronomy tied to a location in Tasmania**, most of them in the journals of George Augustus Robinson, with others from Milligan, Roth, Walker, Bonwick, the Cottons, Westlake and Lloyd, concentrated on Bruny Island and in the northwest [101].

Robinson wrote in March 1834 that the palawa were **quite familiar with the stars, had names for them all, and were aware of their movements** [101, 102].

And the sky that the archive preserves is rich. Moinee, the Great South Star, tentatively Canopus, and Droemerdeenne, tentatively Sirius, are creator brothers whose parents are the sun and the moon. Pumpermehowlle and Pineterrinner are two Milky Way stars representing fire-making ancestors. Larder, a stingray, is a dark patch in the Milky Way, probably the Coalsack. Three seasonal stars, named differently by different groups, are tentatively Orion's Belt. Lorenepenner is a female star. Vetea is the moon-woman and Punywin the sun-man. There are meteors with names, a lunar eclipse account from August 1831, and a songline tied to the sun's path [101].

The absence

Against all that: **most astronomical objects common in mainland Aboriginal traditions appear in the recorded Tasmanian material, and the Pleiades and the Magellanic Clouds do not** [101]. The authors call the absence peculiar [101].

The cluster does appear once, in a list of prominent eastern dawn stars for 30 June 1834, but with no palawa tradition attached to it [101].

Why the absence is not evidence of absence

The authors are explicit, and this study follows them without qualification. Citing Johnson, they consider it **unlikely that Tasmanian traditions about the Pleiades never existed**, and suggest they were simply never recorded [101].

The reasons are stated plainly. The colonial records were filtered through the colonisers' lens, were often set down by recorders with little astronomical knowledge, and contain misidentifications, conflated terms and transcription errors. The record is fragmented and incomplete. Unrecorded traditions may exist, as with the Pleiades, and fieldwork with palawa elders is needed [101].

And the cause of the loss is named: colonisation, disease, dispossession and genocide. The Black War was a series of conflicts in the early nineteenth century. Robinson's Friendly Mission, from 1829 to 1834, relocated the remaining palawa to Flinders Island, where many died, and this brought the near-decimation of culture, traditions and languages. Some records were further lost in a house fire in 1959 [101].

A cultural revival is now underway, and some traditional knowledge has survived within Aboriginal communities [101].

What Tasmania does prove, and it is important

Tasmanian oral tradition reaches very deep. A 2023 study in the *Journal of Archaeological Science* argues that palawa traditions recall the flooding of the Bassian Land Bridge that made Tasmania an island, and the position of a bright southern star near the South Celestial Pole, Moinee, identified as Canopus, as the seas rose about twelve thousand years ago [103, 104]. The researchers describe it as the only example in the world of an oral record describing a star's position as it would have appeared more than ten thousand years ago, and the project engaged with members of the palawa community [103, 104].

So Tasmania demonstrates, better than anywhere else on Earth, that **a star tradition can be carried accurately for twelve thousand years**. That is the strongest support in the entire study for the general proposition that sky knowledge survives in oral form across very long spans.

And it is Canopus, not the Pleiades.

Motifs

M1, M2, M3 and C all **unrecorded**. Not absent. Unrecorded.

Grades

That the Pleiades are absent from the recorded palawa material while other sky objects are present: established, on the specialist reconstruction. That palawa traditions about the Pleiades never existed: **not supported**, and explicitly argued against by the authors of the reconstruction. That palawa oral tradition preserves a star's position from about twelve thousand years ago: supported, on the 2023 study, and the strongest such claim in the literature.

Near-truth

The first gather listed Tasmania's silence as a data point against the universality of the sisters story. That was wrong, and it is corrected here. **The silence is a record of what was done to the people, not of what they knew.** Robinson himself wrote that they had names for every star. The names are gone because the people who held them were removed and died, and because the men who wrote things down wrote down what interested them.

The honest use of Tasmania in this study is the opposite of what the first gather implied. It is the one place that shows a star tradition surviving twelve thousand years intact, and the one place where we can say with certainty that a Pleiades tradition's absence from the page tells us nothing at all about its presence in the world.

> ✦ Practice: for the names that are gone Breathe in without asking for anything. Soft pause. Breathe out and leave the silence as it is.

The Whole · Thirteen Breaths of the Thirteen

What this is

Thirteen deep passes are complete. Greece, Australia, South Asia, the steppe, the eastern woodlands, Mesopotamia with Egypt, China, Bantu Africa, the Khoe and San, the Amazigh, Mesoamerica and the Andes, Polynesia, and the Gathered Together.

Each was a falsification rung: a people chosen to be the hardest available test of what the previous ones had established, with a ledger of claims and a statement at the end of what had survived.

This is the thirteenth breath of the thirteen. It takes the same frame, Sky, Name, Form, Number, Story, Missing, Pursuit, Year, Rite, Land, Word, Wound, Return, and asks it of the whole.

Then three illuminations, drawn from all of it.

Then three questions, which is what the author asked for and which the work has earned.

THE THIRTEEN BREATHS OF THE WHOLE

Breath 1. Sky

One object, six events, and a reason

The Pleiades is an open cluster about two degrees across, holding six or seven stars separable by an ordinary eye, inside a faint reflection nebulosity that almost nobody notices. Its brightest member is magnitude 2.9. It lies within about four degrees of the ecliptic.

From that last fact everything in this study follows. The sun, moon and planets pass close to it; the moon occults it monthly; and it rises, sets and culminates in a fixed annual relation to the solar year.

It offers six usable events, and across thirteen rungs every one of them is somebody's marker.

Event	Used by
Heliacal rising, first dawn appearance	Greece, India, Aotearoa, Zulu, Lozi, Ila, Xhosa, Khoikhoi, Australia
Heliacal setting, last dawn appearance	Greece
Acronychal rising, first evening appearance	Hawai'i, Tahiti, the Senga of Zambia, the Torres Strait
Evening setting	Greece, the Amazigh
Culmination	China, the Haudenosaunee, the Zulu, Khoikhoi and Setswana, the Aztecs
Disappearance	the Maasai

And a seventh use that is not an event at all: the Andean reading of the cluster's **brightness**, which asks not when but how clearly.

Grade: established.

Breath 2. Name

The name map

Fourteen traditions in nine language families name it for its **clustering**: MUL.MUL, Subaru, Ülker and its Tatar, Bashkir and Sakha cognates, Kimah and the Aramaic, Syriac and Arabic kin, al-Thurayya, Tagemmunt, !Khunuseti, the San !xwe family, nyokoaro, kupa and hramadka, Mao linked to Liu, Tianquiztli, Te Huihui o Matariki, and the *pleios* reading of Pleiades. The Bantu peoples go further and name only the act.

The rest divide into four small families and some singletons:

Hair on a great animal. Mesopotamian *zappu*, the Bristle of the Bull of Heaven. Chinese *Mao*, the Hairy Head of the White Tiger. Two unconnected literate astronomies, the same move.

Beings. Greek daughters of Atlas. Mesopotamian Sebettu, seven armed male gods. Indian Krittika, six foster-mothers. Australian Minyipuru and Kungkarangkalpa. Cherokee Ani'tsutsă, the Boys. Khoikhoi daughters of the sky god. Amazigh daughters of the night. Māori a mother and eight children.

Function. Bantu *isiLimela*, the digging. Quechua *Qullqa*, the storehouse. Greek *Pleiades* on the sailing reading.

And three singletons that belong to nobody else. Sanskrit *Krittika*, the cutters. Maya *Tzab-ek*, the rattlesnake's rattle. Turkic *Ülker čerig*, a battle formation of scattered detachments.

Grade: established.

Breath 3. Form

No form is universal and the commonest answer is **none at all**.

Where a form is given it is: women in six traditions, men in four, children in two, an animal part in two, a building in one, a tool-act in one, a crowd of people in one, and a market in one.

The one thing no tradition does is agree with another about what the cluster is.

Grade: established.

Breath 4. Number

The count map

Count	Traditions
No number at all	the whole Gathered Together family, fourteen traditions
Six	India, the Torres Strait, the *Xiuyao jing*
Seven	Greece, Mesopotamia, China, the Cherokee, the Haudenosaunee, mainland Australia
Nine	Māori
Eleven	an Andean reckoning
About a hundred	the Talmud, reading *kimah* as *ke-me'ah*

Six different answers, and the largest group gives no answer.

And the critical finding: in no language but modern English is a number part of the cluster's name.

Grade: established.

Breath 5. Story

Thompson's claim that the constellation was nearly always imagined as a group of seven sisters, with myths explaining why only six are seen, is the single sentence on which the popular belief rests.

Tested across twelve peoples it holds for two: Greece, and mainland Australia. And Greece's sisters sit on a name that probably meant the sailing stars.

Of the other ten, four have no narrative about the cluster at all, three make it male, one makes it children, one makes it a mother with sons and daughters, and one makes it a tool.

Grade: not supported.

Breath 6. Missing

Eight mechanisms, six traditions, no two alike

Tradition	What happened to the missing one
Greece	Merope dimmed in shame at a mortal husband
Greece	Electra dimmed mourning Troy
Greece	six entered a god's embrace and one did not
India	Arundhati could not be impersonated, and is Alcor beside Mizar
The steppe	she was stolen by the seven men of the Bear, and is seen among them
Australia	taken, and sometimes recovered
Cherokee	pulled back by his mother, and became a pine tree
Onondaga	looked back at his father's voice, and became a falling star

Eight answers to one arithmetic problem. Several explain different physical objects: a faint star, a tree, a meteor.

And the rule that holds without exception across thirteen rungs: no count, no lost sister.

Grade: established.

Breath 7. Pursuit

Present in four traditions and absent in nine.

Where present, the sky supplies it: the cluster rises first and Orion rises behind it and follows it down, from both hemispheres, every night. The premise needs no transmission.

But the endings are contrary. Greece: the women are taken by gods and found the aristocracy. Australia: the man breaks marriage law and never catches them. The steppe: the seven already have her. Southern Africa: the women send the hunter out and he fails and cannot come home.

Same arrangement of stars. Four societies. Four outcomes, each fitted to its own law.

Grade: established.

Breath 8. Year

Thirteen for thirteen. The only column that is full.

Harvest and plough in Boeotia. The thirteenth month in Babylon. The sacred fire in Vedic India. The lamps of Karthigai. Midwinter in the Canon of Yao. The New Year at the zenith in the Finger Lakes. Winter and the burning season in Australia. Planting in the Torres Strait. The cold on the steppe. The rains in Namaqualand. The digging from Zanzibar to the Cape. Thirst and cloth in the Sahara. The world's continuation at Tenochtitlan. The rains eight months out in the Andes. Makahiki in Hawai'i. The new year in Aotearoa. Midnight in a Belarusian village.

The reason is geometric and it is the same everywhere: four degrees from the ecliptic, compact enough for six events to be sharp, visible from almost the whole inhabited Earth.

Grade: established. This is the study's firmest result.

Breath 9. Rite

The widest range of any breath. Temples at Nineveh, Kalhu and Dur-Sharrukin. The Maha Deepam on Arunachala and six lamps in Tamil doorways. Arundhati shown to a bride. The Great Feather Dance at the Haudenosaunee New Year. Coals cast at the rising by Ngemba elders. The Kungkarangkalpa songline performed by elders of three deserts. A captive opened at midnight on

the Hill of the Star. A pilgrimage to Sinakara. Mothers lifting children in Namaqualand and in Zululand. An oven of birds and root vegetables opened at dawn in Aotearoa so the stars can eat.

And in Greece, with the fullest story on Earth: **nothing attested at all.**

Grade: established as the distribution.

Breath 10. Land

Six kinds of anchoring, and they do not correlate with anything else.

A commemorative mountain, Greece. A songline that is the story, Australia. A built temple and hill, India and Mesoamerica. Three royal cities and the boundary stones, Mesopotamia. A filing system, China. A townhouse and a living pine, the woodlands. Worked ground, Bantu Africa. The open desert, the Amazigh. A nation's statute, Aotearoa.

Grade: established.

Breath 11. Word

The carriers, ranked by cost

Carrier	Cost to maintain	Where
An ordinary noun	none	the fourteen Gathered Together traditions
A verb in daily speech	none	Bantu Africa
A proverb	almost none	the Amazigh
A domestic rite	low	Arundhati darshan
Folktale	low	the steppe
An annual observation	low	the Andes
Songline and performance	high: needs standing	Australia
Calendar and festival	high: needs authority	India, Mesoamerica, Aotearoa
State archive	very high: needs scribes and libraries that do not burn	Mesopotamia, China
Manuscript	fragile: one copy, one family	the Māori nine

The most widely shared layer is the cheapest one. That is not a coincidence and it is treated in the third illumination.

Grade: supported.

Breath 12. Wound

Six ways a Pleiades reckoning ends, and one way it comes back

Mechanism	Where	What happened
Precession	India	the equinox left Krittika; the nakshatra list was re-headed with Ashvini
Prophetic reform	the Haudenosaunee	Handsome Lake fixed the New Year to the January new moon
An empire's calendar	the Amazigh	Rome brought the Julian months and they outlived Rome by fifteen centuries
A timetable	the Xhosa	initiation moved from June to the December school holidays
Destruction	Mesoamerica, Tasmania, the /Xam	the practice killed, the record made by the killers or not made at all
Syncretism	the Andes	the observation attached itself to the feast of San Juan and survived
Recovery	Aotearoa	manuscript to scholar to roadshow to statute, in under a decade

And the rule for reading silence, which the study needed and found at rung six. An absence in a vast record means something: Mesopotamia said seven for two thousand years and never once said one was missing. An absence in a fragmentary record means nothing: the palawa had names for every star and the Pleiades are simply not in what was written down.

Grade: established.

Breath 13. Return

What is it for?

Thirteen rungs, and the answers stack into one sentence each.

Harvest, and know when to sail. Keep the year true and the house safe. Light the fire, light the lamp, be faithful. Know the cold is coming. Hold the New Year and give thanks for the food. Rectify midwinter and carry out the sentences. Begin to dig. Know the rains are near, and lift the child towards them. Carry water, or carry cloth. Prove that time will continue. Know how much to plant. Remember the dead, feed the living, make a wish.

And beneath all of them, the Luba: **it is one of the three things that come back.** The sun every day, the moon every month, the Pleiades every year, and the man not at all.

Grade: established.

THREE ILLUMINATIONS

THE FIRST ILLUMINATION

The Function Is Older Than the Story

Everywhere the layers can be dated, compared or watched, the **use** of this cluster is deeper than the **story** about it.

In Greece, the scholarly reading reverses the myth. The name probably derives from *plein*, to sail, because the cluster delimited the Mediterranean sailing season; the ancient name came first, the sister deities followed, and a mother named Pleione was invented later to explain a word that was already there. The fullest Pleiades story on Earth is a gloss on a shipping calendar.

In India, Krittika heads the earliest nakshatra lists because it rose due east at the vernal equinox, and the Shatapatha Brahmana's instruction is to found the fires under it. The seven wives, the impersonation and the exile arrive later and may have come from the steppe.

On the steppe, the Turkic name records a battle formation before it records any tale.

In Mesopotamia and China, the two oldest and largest written astronomical records on Earth, there is a leap-year algorithm, a mansion system, a cult, an iconography, a legal symbol, a season rule, and **no story at all**. Five thousand years of records between them, and the narrative slot is empty.

And in southern Africa, where two unrelated peoples have lived under one sky for centuries, the stories differ completely and the names agree. The Bantu say *the digging*. The San say *a crowded bunch of small stars*. And the Khoikhoi, who have the richest Pleiades narrative on the continent, call the cluster underneath that story **!Khunuseti, to gather together**.

That last is a controlled comparison rather than a chronological inference, and it is the strongest form the finding takes.

Grade: established.

THE SECOND ILLUMINATION

No Count, No Lost Sister

The six-versus-seven anomaly is the engine of the hundred-thousand-year proposal: people say seven, see six, and explain the shortfall, and they do it so widely that it looks inherited.

Thirteen rungs tested it. **The correlation is complete and has no exception.**

Where a tradition committed to a number larger than the eye reliably resolves, it generated an explanation. Eight of them, in six traditions, no two alike, several explaining entirely different physical objects.

Where a tradition did not commit to a number, there is nothing missing and nothing explained. Mesopotamia for two thousand years. China for three thousand. Bantu Africa across a continent and forty languages. The Khoe and San, who have a full narrative and still no count. The Torres Strait, who say six and mean it. Māori, who say nine. And the whole Gathered Together family, who say no number at all.

So the anomaly is not a worldwide wound carried from deep time. It is a local arithmetic problem, created wherever a culture brought a number to the sky, and solved locally and differently every time.

And nobody got the number by counting.

Mesopotamia used its own seven-sign as a name for the cluster, in a culture already full of seven winds, seven sages, seven gods and seven demons. The Cherokee seven is the Cherokee sacred number. The Eurasian seven belongs to the Great Bear, where Kazakh gives seven robbers, seven

elders and seven together, and the Pleiades is *Ülker*, which has no number in it at all. And English got its seven from Greece.

Two scholars have been arguing about this for years without noticing that a third answer was available. Norris holds that no combination of seeing, eyesight or sky brightness would cause a human to count seven stars, and concludes the number must be inherited. His critic holds that ancient eyes were better, and concludes it came from looking.

This study's answer is that it came from neither. It came from arithmetic.

Grade: established. This is the study's principal result.

THE THIRD ILLUMINATION

The Universal Is a Perception, and It Survived Because It Was Free

What is actually universal about this cluster is not a story and not a number. It is something prior to both.

Fourteen traditions, at least nine unrelated language families, six continents and the Pacific, looked at these stars and called them a gathering. A heap in Hebrew, Aramaic, Syriac and Belarusian. A herd of camels in Arabic. The Stars in Sumerian. The group in Amazigh. To gather together in Khoikhoi. A crowded bunch of small stars in the Kalahari. An army of scattered detachments on the Turkic steppe. The Star Thing in the Amazon. A clustering in Chinese. A marketplace in Nahuatl. An assembly in Māori. Gathered together in Japanese. And full and many under the Greek sisters.

It is not inherited, because there is no route between most of them. **It is not invented**, because nobody had to invent it. It is **received**: the object has three properties and the eye reports them.

It is **plural**: six or seven separable points, so it cannot be one thing. It is **compact**: two degrees, so the members are nearer each other than to anything else and the eye groups them before the mind names them. And it has **no leader**: the brightest member is magnitude 2.9, bright enough to see and too faint to dominate, so unlike the Hyades with Aldebaran it cannot be read as one thing with attendants.

Plural, compact and leaderless has exactly one meaning, and every language says it with whatever it has: troops, camels, a market, a heap of grain, an assembly.

And this layer is the most widely shared because it was the cheapest to keep.

A story needs a teller, an occasion and someone who thinks it worth passing on. A ceremony needs a calendar and authority. An archive needs scribes and a library that does not burn. A songline needs standing and the right to speak. Across thirteen rungs every one of those was interrupted somewhere: by removal, conquest, conversion, a prophet's reform, a school timetable, an empire's calendar, precession, and a house fire in 1959.

A name is carried by children learning to talk. Nobody preserves it. Nobody can take it. It survives because it costs nothing.

And the corollary matters as much as the finding. The stories in this study reached us overwhelmingly through outsiders: Mooney in 1887, Hahn in 1881, Bleek and Lloyd from the 1870s, Parker on the Narran River, Beauchamp in 1900, Sahagún after the conquest, Robinson on his Friendly Mission. They are real, and they are a selection, and the selector was usually a man with Hesiod in his head.

The names are what the peoples kept themselves. And what they kept, almost everywhere, was: *a gathering*.

Grade: established as the distribution; supported as the explanation.

THREE QUESTIONS TO ASK OF IT

The author asked whether there are three questions to put to this work now that the illuminations are in. There are, and they are chosen on three criteria: each is **answerable**, each would **change a conclusion**, and together they span the whole study.

THE FIRST QUESTION

What do the other clusters get called?

This is the control, and nobody appears to have run it.

The third illumination claims that fourteen peoples called this cluster a gathering because it is plural, compact and leaderless. That explanation makes a **prediction**, and the prediction is testable in a good library in a fortnight.

If the explanation is right, other objects with the same three properties should attract the same kind of name, and objects lacking them should not.

- **Praesepe**, the Beehive in Cancer, is plural, compact and leaderless, and is naked-eye visible as a misty patch. It should attract gathering-names, and the English name already does.
- **Coma Berenices** is a large loose scatter: plural and leaderless but not compact. It should attract gathering-names more weakly, and names about hair or spilled things more strongly.
- **The Hyades** is plural and fairly compact but **has a leader**, Aldebaran. It should attract names about a thing with a head: a face, a jaw, a V, an animal. Mesopotamia called it the Jaw of the Bull. China called it the Net. The /Xam called Aldebaran the Male Hartebeest.
- **The Magellanic Clouds** are not resolvable at all. They should attract names about patches, clouds and smoke, and never about crowds of individuals.

The question to ask: across as many unrelated languages as can be reached, do gathering-names track the three properties?

What it would settle. If they do, the third illumination stops being an interpretation and becomes a **rule about human perception of the sky**, with predictive force. If they do not, the gathering-names for the Pleiades are a fact about the Pleiades alone and need another explanation.

And if the Hyades turn out to be named for crowds as often as the Pleiades are, the leaderless criterion fails and the whole explanation has to be rebuilt.

This is the single most valuable piece of work this study has left undone, and it is the one most likely to be within reach.

THE SECOND QUESTION

How much of the sisters motif belongs to the collectors?

This is the question that could still overturn the result, and the study has flagged it since the first gather without being able to answer it.

Almost every non-European Pleiades tradition in this work reached us through a nineteenth or early twentieth century collector. Mooney, Hahn, Bleek and Lloyd, Parker, Beauchamp, Ridley, Greenway, Mathews, Schultze, Robinson, Milligan. Most were sympathetic. All were writing in English or German or Dutch, for European readers, and all of them knew the Greek story before they heard any other. Several had been made to parse Hesiod as boys.

The English phrase in their heads was **Seven Sisters**.

The question to ask: does the strength of the M1 and M2 motifs, female group and male pursuer, differ systematically between accounts collected **before** wide European contact and accounts collected **after** it, within the same regions?

How to run it. Code every published Pleiades account for the four motifs. Date each account and classify it by the recorder's background and the contact history of the community. Then look for a gradient.

What it would settle. The study's two-of-twelve result for Thompson's claim is built on the record as we have it. If the sisters motif is systematically stronger in later and more heavily mediated accounts, then even two of twelve is too high, and the Greek template has been shaping the global record for two centuries. If there is no gradient, the regional distribution is real and the finding stands as it is.

And it cuts the other way too. If the motif is stronger in the *earliest* accounts and weaker later, that would be evidence of genuine old traditions eroding, and the hundred-thousand-year proposal would gain something it currently lacks.

Either result is worth having. Nobody has done it.

THE THIRD QUESTION

How many times has our species independently found the same instrument in the sky?

This is the question that opens the next body of work, and it comes straight out of the Codex of Symbols.

The Second Illumination of that book said the shapes are shared because the breathers are: one body, one sky, one way of seeing. This study was its hardest test, and the test produced something more specific than the original claim.

Convergence here was not mainly on shapes or on stories. It was on techniques.

- **The culmination rule** was found **four** times, independently: China, the Haudenosaunee, the Zulu, Khoikhoi and Setswana, and the Aztecs. Three continents, both hemispheres. It is the least obvious and most accurate of the cluster's events, and the peoples who needed precision all found it.
- **The gathering-perception** was found **fourteen** times.
- **The lunisolar conjunction rule**, cluster plus moon plus a counted interval, was built **three** times: Babylon's leap rule, Karthigai's full moon in Krittika, and the Haudenosaunee zenith-then-new-moon-then-five-days.
- **Photometric forecasting**, judging transparency rather than time, was found at least **once** and possibly twice: the Andes, verified in *Nature*, and the Māori star-by-star reading, which nobody has tested.

The question to ask: is this rate of independent technical discovery normal, or is the Pleiades unusual?

Run the same analysis on the other great sky objects. How many peoples independently discovered that a heliacal rising marks a season? That a circumpolar group can be read as a clock face? That a star low on the horizon measures the air? That the moon's phase and a star's position together make a lunisolar calendar?

What it would settle. If the rate is comparable across objects, then what this study has documented is not a fact about the Pleiades but **a fact about human beings under a sky**: that the same small set of observational techniques is discovered again and again, wherever people need the year.

That is a larger claim than anything in this book, and it is the Second Illumination of the Codex of Symbols restated with teeth: not that the shapes are shared because the breathers are, but that **the methods are shared because the problems are, and because there are very few good answers.**

Which is also the finding of *One Origin, Many Faces*, arrived at from the opposite direction. Four peoples found the same answer to thin air. Four peoples found the same answer to the midwinter sky.

THE TWO HANDS

The measured hand. The Pleiades is a universal calendar marker, for a geometric reason, and that is established beyond dispute across thirteen rungs. The seven sisters pursued by a man is a regional motif at two of twelve, and in one of those two the sisters are younger than the name. The missing seventh is explained eight different ways by six traditions and not at all by the seven that never counted. The number seven is in the English name and in no other language's. The universal layer is a perception of gathering, found in fourteen traditions across nine language families, and it survived because it was free to carry. The hundred-thousand-year proposal is not supported by any of this, and the anomaly it was built to explain rests on a premise the two largest written records on Earth never felt.

The symbolic hand, marked as such. One object, and everyone looking at it saw first that it was many things held together. Then each people said what the many things were, and what they were for, and the saying was always about what that people needed: the rain, the digging, the cold, the thirst, the dead, the harvest, the law, the year, the world's continuation. The differences are not errors and the agreement is not a memory. The sky offered a gathering, and every people answered with its own.

Grade for the first: established. Grade for the second: symbolic.

WHAT REMAINS OPEN

Beyond the three questions, the study's own ledger carries these:

- **Are the three lunar-station systems related?** Babylon put the cluster first, India put it first, China put Spica first and the cluster eighteenth. Bezold and Needham argued for Babylonian origin; it has been disputed ever since.
- **Is the Nebra disc a Near Eastern glyph?** Six dots around a seventh is the documented early form of the Mesopotamian seven-dots glyph. An Assyriologist and a Bronze Age specialist could settle it in an afternoon.

- **Does the Māori star-by-star forecast work?** Testable by exactly the method Orlove, Chiang and Cane used.
- **Amanar**: Pleiades or Orion? Needs a Tuareg-language source.
- **The Amazigh rung** is the thinnest in the book and should be rebuilt by someone with access to Amazigh scholarship.
- **Berezkin's work** is the single most important body of evidence here and was read in English summaries only. His paper on the Eurasian areals of Pleiades cosmonyms was not read at all.
- **The June against August-September conflict** in the southern African datings is unresolved.
- **And nobody outside this room has read a word of it.** Until a reader with independent expertise in genetics, archaeology, Assyriology, Māori scholarship, Amazigh studies or Russian folkloristics has been through it, every grade in this book is provisional.

A note on evidence

This whole study was prepared with an AI as a gatherer and a clearer of form. It is a mirror, not a mind. It reads secondary sources in English, it has not opened a cuneiform tablet or a Tamazight dictionary or Te Kōkau's manuscript, and where it has reasoned beyond its sources it has said so and graded the reasoning lower. Its corrections of itself are recorded in the text rather than tidied away: Deep Pass Four corrected Deep Pass Three; Deep Pass Two killed an illumination from Deep Pass One; the central finding of the whole book came from a reflection by Architect+ pointing at a single line the first gather had buried. The author reads everything and decides what goes on the page.

APPENDICES

Appendix A: The Motif Map

One row per people. **M1** is a female group, **M2** a male pursuer, **M3** an explained missing member, **C** a calendar use. The count column gives the number the tradition itself commits to.

People	Name for the cluster	Count	M1	M2	M3	C
Greece	Pleiades, daughters of Atlas	seven	yes	yes	yes, three ways	yes
Mainland Australia	Minyipuru, Kungkarangkalpa, Miyay Miyay	seven	yes	yes, mostly	variable	yes
Arnhem Land	the women as partners	none	yes	no	n/a	yes
Torres Strait	Usiam	**six**	**no, male**	no	no	yes
Tasmania	unrecorded	n/a	n/a	n/a	n/a	n/a
South Asia	Krittika, the cutters	**six**	yes	displaced	yes, named and relocated	yes
Siberia and the steppe	Ülker, an army of detachments	none	no	**reversed**	yes, stolen	yes
Cherokee	Ani'tsutsă, the Boys	seven	**no, male**	no	yes, a pine tree	yes
Haudenosaunee	Oot-kwa-tah	seven	**no, male**	no	yes, a falling star	yes
Plains: Lakota, Cheyenne, Kiowa	the seven maidens of Mato Tipila	seven	yes	yes, a bear	no	partial
Mesopotamia	MUL.MUL, zappu, the Sebettu	seven	**no, male**	no	**no**	yes
Egypt	the decan Khau	none	no	no	no	yes
China	Mao, the Hairy Head	seven	no	no	**no**	yes
Japan	Subaru, gathered together	none	no	no	no	inherited

People	Name for the cluster	Count	M1	M2	M3	C
Bantu peoples	isiLimela, kilimia, the digging stars	**none**	no	no	**no**	yes
Khoikhoi and Nama	!Khunuseti, to gather together	none	yes	**inverted**	**no**	yes
San: !Ko, ! Kung, /Gwi, /Xam	!xwe, //xwhai, a crowded bunch	none	no	no	no	yes
Amazigh	Cat iheḍ, Tagemmunt	none	partial	no	no	yes
Hebrew and Arabic	Kimah the heap; al-Thurayya	none	partial	Arabic only	no	partial
Bronze Age Europe	the seven dots of the Nebra disc	seven	unknown	unknown	unknown	yes
Belarus and the Slavic lands	Kupa, Hramadka, the Sieve	seven in some names	no	no	no	yes
Maya	Tzab-ek, the rattlesnake's rattle	none	no	no	no	yes
Aztec	Tianquiztli, the marketplace	none	no	no	no	yes
The Andes	Qullqa, the storehouse	eleven in one reckoning	no	no	no	yes
Barasana	nyokoaro, the Star Thing	none	no	no	no	yes
Hawai'i and Tahiti	Makali'i, Matari'i	none	no	no	no	yes

People	Name for the cluster	Count	M1	M2	M3	C
Māori	Matariki, Te Huihui o Matariki	**nine**	mother and eight children, mixed	no	**recovered, not lost**	yes

Reading the map

The calendar column is the only one that is full. Every people in this study uses the cluster to run the year, and this holds whether the stars are sisters, brothers, gods, a tiger's mane, a hen, a digging stick, a marketplace or a granary.

Women: a minority. And four traditions explicitly make them male, which is stronger evidence than mere absence.

Pursuit: four in the full form. Greece, mainland Australia, the Plains with a bear, and Arabic in the reduced form of Aldebaran following. The Khoikhoi version is inverted, the South Asian one displaced, the steppe one reversed into possession.

The missing one: where a count is committed, and nowhere else. Seven traditions commit to a number larger than the eye reliably resolves, and every one of them has an explanation. Seven traditions commit to no number, or to a number the eye can meet, and not one of them has anything missing.

And the counts, gathered. No number at all in fourteen traditions. Six in three. Seven in six. Nine in one. Eleven in one Andean reckoning. About a hundred in the Talmud, reading *kimah* as *ke-me'ah*.

Appendix B: What Remains Open

The study's own ledger, gathered from thirteen passes. Each of these is recorded in the text where it arose and is repeated here so that a reader can find the soft ground quickly.

The three questions

Set out in full in Part Three, and repeated here as a list.

1. **What do the other clusters get called?** Praesepe, Coma Berenices, the Hyades and the Magellanic Clouds, across as many unrelated languages as can be reached. If gathering-names track the three properties of plural, compact and leaderless, the study's principal explanation becomes predictive. If the Hyades, which has a leader, is named for crowds as often as the Pleiades, the explanation fails.
2. **How much of the sisters motif belongs to the collectors?** Code every published account for the four motifs, date each one, classify the recorder, and look for a gradient between pre-contact and post-contact collections.
3. **How many times has our species independently found the same instrument in the sky?** Run the same analysis on the other great sky objects and ask whether the rate of independent technical discovery found here is normal.

Specific items flagged in the passes

- **Are the three lunar-station systems related?** Babylon put the cluster first in the Path of the Moon, India put Krittika first in the earliest nakshatra lists, and China put Spica first and the cluster eighteenth. Bezold and later Needham argued for Babylonian influence and a foreign origin for the Chinese mansions; it has been disputed ever since. This is the study's most consequential unresolved question and it appears in three different forms across Passes Six, Seven and Three.
- **Is the Nebra disc a Near Eastern glyph?** The Mesopotamian seven-dots glyph, which denotes the Pleiades on boundary stones and seals, was at first six dots around a central dot. The disc shows six around a seventh. An Assyriologist and a Bronze Age specialist could settle it in an afternoon. Graded contested.

- **Does the Māori star-by-star forecast work?** Nine stars, each read for the brightness of its own domain, is the Andean photometric method generalised. It is testable by exactly the procedure Orlove, Chiang and Cane used, and no test has been found.
- **Is there an attested ancient Greek festival of the Pleiades?** This study found none and graded the absence supported, not established. It needs a specialist on the Greek festival calendar.
- **The Greek parapegmata discrepancy.** Euctemon gives 6 May and Ovid 13 May for the cluster's dawn rising, while a modern computation with a 15.5 degree arc gives 21 May for Athens. Two weeks. The quantity in dispute is exactly the one that decides whether seven stars resolve.
- **Amanar: Pleiades or Orion?** Several general sources give it as an Amazigh name for the cluster; it is commonly given for Orion. Needs a Tuareg-language source.
- **The June against August-September conflict.** Sources give the southern African first visibility of the cluster as June in some accounts and August or early September in others. These cannot both be the heliacal rising at the same latitude. Unresolved, and it matters, because the argument about local adjustment depends on knowing which event each people used.
- **The Cherokee Feather dance and the Haudenosaunee Great Feather Dance.** Pass Five's central illumination links a story element from one people to a ceremony of another. Graded supported and flagged for a knowledge keeper.
- **The Arundhati wedding rite.** The sources for it are devotional and popular rather than philological. Needs a specialist on Hindu domestic ritual.
- **The Plains Devils Tower tradition and the Siberian seven men.** A bear chasing seven women up a rock, in the one region where Ursa Major and the Pleiades are never named together, and where Berezkin holds the Bear's seven men arrived from southern Siberia. Open.

Limits of this study as a whole

- **Berezkin's work** is the single most important body of evidence here and was read in English-language versions and summaries. His paper specifically on the Eurasian areals of cosmonyms for the Pleiades was not read at all. A reader with Russian should go through Pass Four before any of it is printed.
- **The Amazigh pass is the thinnest in the ladder** and says so in its own ledger. No Amazigh-language source was reached.

- **No primary language was read**: not cuneiform, not Nahuatl, not Tamazight, not Te Reo Māori, not Classical Chinese, not Sanskrit, not Greek.
- **Most of Part Two rests on colonial-era collection.** Mooney 1887 and 1900, Hahn 1881, Bleek and Lloyd from the 1870s, Parker and Lang, Beauchamp 1900, Schultze 1907, Ridley, Greenway, Mathews, Robinson, Milligan, Sahagún. They are real sources and they are a selection, and the selector usually knew Hesiod.
- **And nobody outside this room has read a word of it.** Until a reader with independent expertise in Assyriology, archaeoastronomy, Māori scholarship, Amazigh studies, Russian folkloristics or any of the traditions described has been through it, every grade in this book is provisional.

Appendix C: Sources

Three hundred and sixty-three sources, numbered in the order they first appear. Every claim in this study that rests on a source carries its number in the text.

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In Harmony, Small Things Grow Towards Unity.